

February 14, 1995

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[CA105-5-6895]

Approval and Promulgation of State and Federal
Implementation Plans;
California--Sacramento and Ventura Ozone;
South Coast Ozone and Carbon Monoxide

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final, interim final, and direct final rule.

SUMMARY: EPA today approves State Implementation Plan (SIP) control measures and promulgates Federal implementation plans (FIPs) and control measures to attain, by the applicable statutory deadlines, the national ambient air quality standards (NAAQS) for ozone in the Sacramento and Ventura nonattainment areas, and to attain the NAAQS for ozone and carbon monoxide (CO) in the South Coast nonattainment area.

EPA takes final, interim final, or direct final approval action on California Air Resources Board (CARB) SIP submittals relating to reformulated gasoline, diesel fuels, consumer products, clean fleet provisions, and new-technology measures.

Because the SIPs for the California areas are not yet fully approved, EPA is promulgating FIPs that contain statewide emissions standards for medium- and heavy-duty motor vehicles, an enhanced inspection and maintenance (I/M) program for motor

vehicles applicable in the FIP areas, a clean fleet program for light and medium duty vehicles in the FIP areas, and a prohibition on importation of 49-state vehicles by California residents. EPA is finalizing statewide emissions standards for various categories of nonroad engines and vehicles, and rules applicable in the South Coast to reduce emissions from locomotives, ships, and ports. EPA is issuing interim final standards for airport ground service equipment and auxiliary power units in the FIP areas.

EPA is promulgating final rules, specific to each area, for industrial and commercial stationary and area sources. On a statewide basis, the FIP includes final rules for architectural coatings, aerosol spray paints, and pesticides.

EPA is also taking final, interim final, or direct final SIP approval action on rules and new-technology measures adopted by the South Coast Air Quality Management District (SCAQMD). EPA is taking final action to approve in part and disapprove in part the South Coast SIP for CO.

DATES:

Effective Dates: The FIP actions in this document are effective on February 14, 1997. The final and interim final SIP actions (40 CFR 52.220) in this document are effective on [30 days after publication of the Federal Register]. The direct final SIP approvals (40 CFR 52.220) are effective on [60 days after publication of the Federal Register], unless adverse comments are received by [30 days after publication of the Federal Register].

If the effective date of the direct final SIP actions is delayed, a timely notice will be published in the FEDERAL REGISTER.

Comments: The deadline for written comments on the interim final SIP and interim final FIP actions (40 CFR 52.220, 52.2956, 52.2970) is July 14, 1995.

Hearing: EPA will hold a public hearing on the interim final FIP actions (40 CFR 52.2956, 52.2970) on June 14, 1995. The Supplemental Information portion of this document provides additional information on the public hearing.

ADDRESSES: Written comments on the interim final actions must be received by EPA at the address below on or before the close of the public comment period. Comments should be submitted (in duplicate, if possible) to:

EPA Air Docket Section
Attn: Docket No. A-95-0x
Environmental Protection Agency (Mail Code - 6102)
Waterside Mall, Room M-1500
401 M Street, S.W.
Washington, DC 20460
(phone 202-260-7549)

EPA will hold a public hearing on the interim final FIP actions at 10 a.m. on June 14, 1995, in the auditorium of the South Coast Air Quality Management District, 21865 E. Copley Drive, Diamond Bar, California.

Materials relevant to this rulemaking are contained in Docket No. A-94-09, in the EPA Air Docket Section located at the above address. The docket is available for public inspection between 8:30 a.m. and 12 noon, and between 1:30 p.m. and 3:30 p.m. EPA may charge a reasonable fee for copying.

A copy of the docket is also available for review at:

Regional Administrator
Attention: Office of Federal Planning (A-1-2)
Air and Toxics Division
Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Interested persons may make an appointment with Ms. Virginia Petersen at (415) 744-1265, to inspect the docket at EPA's San Francisco office on weekdays between 9 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT:

For stationary and area source issues and general information on the FIPs and SIP actions, call EPA's FIP Hotline (415) 744-1151, or Julia Barrow (415) 744-2434, at the Office of Federal Planning (A-1-2), Air and Toxics Division, U.S. EPA, Region IX, 75 Hawthorne Street, San Francisco, California, 94105-3901.

For mobile source issues, call EPA's FIP Hotline (313) 668-4361, or Jane Armstrong (313) 668-4471, at the EPA Office of Mobile Sources, Motor Vehicle and Fuels Emissions Laboratory, 2565 Plymouth Road, Ann Arbor, Michigan, 48105.

SUPPLEMENTARY INFORMATION:

Additional Locations

Copies of this Notice of Final Rulemaking (NFRM), the technical support document, the regulatory impact analysis (RIA), and the SIP provisions are available at the locations identified in the Addresses section above, and are also available for inspection at the addresses listed below:

California Air Resources Board
2020 L Street
Sacramento, California

Sacramento Metropolitan Air Quality Management District
8411 Jackson Road
Sacramento, California

Sacramento Area Council of Governments
3000 S Street, Suite 300
Sacramento, California

El Dorado County Air Pollution Control District
2850 Fair Lane Court, Bldg. C
Placerville, California

Feather River Air Quality Management District
463 Palora Avenue
Yuba City, California

Placer County Air Pollution Control District
11464 B Avenue
Auburn, California

Yolo-Solano County Air Pollution Control District
1947 Galileo Court, Suite 103
Davis, California

South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, California

South Coast Air Quality Management District
Colton Office
851 S. Mt. Vernon Avenue
Colton, California

Southern California Association of Governments
818 W. 7th Street
Los Angeles, California

Southern California Association of Governments
Inland Empire Office
3600 Lime Street
Riverside, California

Ventura County Air Pollution Control District
669 County Square Drive
Ventura, California

Complete dockets on the FIPs, including transcripts of the public hearings and copies of the public comments received, are available at the California Air Resources Board, the South Coast Air Quality Management District office in Diamond Bar, the Ventura County Air Pollution Control District, and the EPA

addresses above.

Electronic Availability

This document is available as an electronic file on EPA's Technology Transfer Network (TTN). For 1200 bps or 2400 bps modems, use 919-541-5742; for 9600 bps use 919-541-1447. The FIP NFRM will be under the Clean Air Act Amendments (CAAA) board, in a section for "Recently Signed Rules." Users should check the initial CAAA announcement screen for updates on file availability. Because of its size, the FIP NFRM will be divided into several pieces, and stored in the compressed "ZIP" archive format. The file names will begin with "FIP." If you need help in accessing the system, call the systems operator by phone at (919) 541-5384 in Durham, North Carolina.

This document is also available through the Internet, by directing your gopher client to "gopher.epa.gov" and selecting the following menu options: EPA Offices and Regions; Region 9; Air and Radiation Programs; California FIPs.

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I. OVERVIEW

A. *Executive Summary*

1. Introduction

EPA issues this Notice of Final Rulemaking under court orders to propose by February 1994¹, and promulgate by February 1995, Federal Implementation Plans (FIPs) to attain the health-based ozone National Ambient Air Quality Standard (NAAQS) in the Sacramento and Ventura areas, and to attain both the ozone and carbon monoxide (CO) NAAQS in the South Coast area. These obligations arise from provisions of the Clean Air Act Amendments

¹The FIPs were proposed on February 14, 1994 and published May 5, 1994; 59 FR 24329.

(CAAA) of 1977 and 1990, and from successful citizen suits to compel disapproval of 1982 attainment plans for the three areas and to require EPA to prepare Federal plans demonstrating attainment of the NAAQS.²

These FIPs are the result of the prior inability of each of the three areas to develop an adequate State Implementation Plan (SIP) as required by the Clean Air Act. Because of these past failures, EPA was required by law to promulgate Federal plans. The courts have interpreted that this Federal responsibility was continued by the U.S. Congress even as it substantially amended the requirements and deadlines of the Clean Air Act in 1990. EPA challenged this interpretation, all the way to the Supreme Court, because the Agency believed that air quality planning is not only required to be done, but is most effectively done, at the local level. EPA believed that the State should have the opportunity to meet the new planning requirements and deadlines of the 1990 Amendments before EPA addressed any failure with a Federal plan.

The plans promulgated today provide for timely attainment of the NAAQS as ordered by the courts. However, EPA has established

²In the case of Sacramento, the lawsuit was filed by the Environmental Council of Sacramento and the Sierra Club; see ECOS v. EPA, No. CIVS 87-0420, slip op. (E.D. Cal. Dec. 2, 1991). The plaintiff in Ventura is Citizens to Preserve the Ojai; see CPO v. EPA, No. CV 88 00982 HLH. For the South Coast, disapproval of the 1982 attainment plan followed litigation by a private citizen, Mark Abramowitz; see Abramowitz v. EPA, 832 F.2d 1071 (9th Cir. 1987). The South Coast FIP order resulted from a lawsuit brought by the Coalition for Clean Air and the Sierra Club, Inc.; see Coalition for Clean Air v. EPA (reported as Coalition for Clean Air v. Southern Cal. Edison), 971 F.2d 219 (9th Cir. 1992), cert. denied, 113 S. Ct. 1361 (1993).

an effective date of February 1997 to allow the State ample time to replace the Federal plans before they are implemented.

California's November 15, 1994 SIP submittal package to EPA was an important first step toward that end. In the SIP submittals, the State and local agencies committed to adopting a specific set of regulations which, when adopted and implemented, would achieve the goal of clean air for these areas. EPA is confident that, working together with the State and local agencies, the SIP for each of these areas can be approved as the sole applicable plan before the FIPs would go into effect.

The Clean Air Act guarantees to all Americans healthy air to breathe. Unfortunately, more than three-quarters of all Californians are currently exposed to health-threatening levels of air pollution -- the most serious problem being ground-level ozone or smog. Ozone causes lung damage and reduced respiratory function in as short a time as one hour. Ozone oxidizes the soft passages in the nose, mouth and throat causing coughing, choking and eye irritation. In addition, ozone can make lungs brittle which reduces people's ability to breath. This limited lung capacity can aggravate preexisting respiratory conditions, such as asthma, to dangerous levels and even in healthy people reduces resistance to disease.

Carbon monoxide is a colorless, odorless, poisonous gas which displaces oxygen from the blood and thereby reduces brain and muscle activity. Carbon monoxide is fatal at high doses.

Due to the scope and complexity of solving the difficult air

pollution problems for these regions of California and the unusual nature of the Federal role, EPA sought to expand the usual public dialogue about the most appropriate mix of clean air strategies that should be finalized for their communities. Through an unprecedented number of workshops, meetings, roundtable sessions, and hearings held over the past year, EPA received a tremendous volume of comments and alternatives from members of the public, State and local governments, and affected businesses, both in California and throughout the nation. The public involvement improved the plan dramatically.

As will be described in more detail, the final FIPs are substantially different than the proposals due to the valuable public comments received, extensive revisions to the FIPs' technical foundations, and intervening State and local planning efforts. The final FIPs facilitate EPA's twin goals: to create plans that are as environmentally and economically sound as possible and to ensure that California remains in control of its clean air programs.

2. Background

a. The Proposed FIPs

The proposed FIPs followed a long history of aggressive and innovative clean air programs in California. As the Clean Air Act was being amended in the fall of 1990, California added another critical piece to its statewide air quality plan with the adoption of the Low Emissions Vehicle and Clean Fuels program. After 1990, both State and the local air agencies continued to

develop new clean air measures to meet the Act's new timetables and requirements. The State added to its extensive vehicle control program by adopting significant controls for consumer products, nonroad engines, and diesel fuel. Local areas also made significant progress. With the South Coast Air Quality Management District (SCAQMD) leading the way, local areas adopted controls for emission sources such as utility power plants, refineries, architectural coatings, solvents, and many others. Some of this work was still going on as California prepared to meet the most significant ozone requirement in the Act - submittal of a full ozone attainment plan by November 15, 1994.

EPA's court deadlines to propose FIPs also came in the middle of the State's process to improve the technical foundations of its existing SIPs and to develop the additional emission reduction measures necessary to meet its November 1994 deadline. EPA used the best data available from the State in early 1994 to develop its estimates of what further controls were necessary. EPA supplemented the State's data with motor vehicle control estimates that the Agency had developed for its nationwide efforts to control motor vehicle pollution. The combination of two sets of data made development of the proposed FIPs difficult. However, two things were clear: significant further emission controls were needed and nearly every sector of the economy contributed to the difficult pollution problems of these regions of California.

Because of the extent and variety of pollution sources in

the FIP areas, EPA proposed or analyzed emission reduction programs for virtually everyone. There were programs for cars and trucks and factories, of course, but there were also programs for such diverse sources as livestock waste, private pilots, trains and ships. While this approach angered some, it brought everyone to the table to discuss our proposals, to develop their own ideas and alternatives and to work with the State and local agencies on the November 1994 ozone SIP submissions.

b. FIP Public Process

EPA tried to use the FIP obligations as opportunities to improve the process and inclusiveness of clean air planning in California. This objective, combined with the sheer size and complexity of the FIPs, led EPA to conduct an unprecedented public participation process. EPA went to great lengths to make the public participation process as user-friendly as possible, sharing with the public the information used in the FIPs and inviting people to suggest the best pollution control approaches for them.

EPA began a dialogue with the public prior to proposing the FIPs in February 1994. A series of eight public meetings were held in October 1993 to describe the task before us, our initial ideas and to listen to local ideas and concerns. After proposing the plans in February, we then held four public workshops in the local FIP areas. The purpose of these all day workshops was to provide a detailed explanation of the basis for our proposals, and to encourage public involvement. The reason we sponsored

these informal opportunities for dialogue was to promote the most informed and thoughtful public comments possible. EPA held formal public hearings in July 1994 and written comments were accepted through August.

In addition to these formal opportunities, EPA staff attended numerous meetings set up by community groups, industry, environmentalists, local and State regulatory agencies, and many others. EPA also set up a FIP hotline to facilitate rapid responses to thousands of public inquiries about the FIP proposals and the process.

EPA's efforts to involve the public spurred an unusually vigorous and healthy debate within each of the affected communities about clean air solutions. The most gratifying result was the unprecedented number of collaborative meetings which occurred between leaders in the business and environmental communities, local governments, and air agencies.

The extensive public outreach served as a catalyst to bring more parties into the process to identify and commit to the clean air strategies that best serve social and economic needs of these communities. These strategies benefitted both EPA in our efforts to substantively revise proposed FIP measures (e.g., airlines, general aviation, ports and ships, heavy-duty trucks, livestock waste) and State and local agencies in their efforts to develop and adopt SIPs.

There are many examples of the contributions of the public to the final FIPs and SIP submittals. EPA regrets that it cannot

name the scores of individuals and groups who were so helpful, but a few examples will serve to highlight the hard work and good ideas of many, many more.

In Los Angeles, the Chamber of Commerce and the Coalition for Clean Air sponsored a series of discussion groups to share concerns and develop consensus among a wide variety of interests throughout the region and the State. These meetings spawned a continuing dialogue between environmentalists and truckers which shaped the FIPs' heavy-duty engine measures finalized today as well as the SIP measure commitments by the California Air Resources Board (CARB). They also spawned extensive discussions about the proposed FIP measures for airports and the ports. Affected agencies, airlines, shippers, chambers of commerce, and local governments debated the appropriate burdens these important commercial activities should bear to contribute to clean air. The innovative ideas developed through these discussions form the basis for the final FIP measures which affect these industries.

In Ventura, the Ventura County Economic Development Association (VCEDA) led an effort to develop an alternative clean air plan. Industry, local government and other community groups came together to debate some of the tough, very local, choices which must be made to develop effective clean air plans. This group presented EPA with a wide variety of comments and alternative measures which contributed greatly to the final strategies EPA finalized today. In addition, this group supported a fee program based on the vehicle miles travelled by

the cars of individuals. This was seen as a means to reduce emissions with less impact on the community than further controls on factories and other industrial sources. EPA strongly supports incentive-based measures to reduce driving and will continue to work with VCEDA and CARB to develop local strategies and pilot programs which could be implemented as part of the SIP.

In Sacramento, many round table community discussions were held as well. The Cleaner Air Partnership, a group of environmentalists and industry leaders have worked with the local regulators and other interested public partners to help to determine Sacramento's clean air future. Their ideas have been reflected in the ongoing work of the local air districts. They have also aggressively sought State legislation to advance many of their proposals.

Each of these groups, and many others, contributed greatly to the development of the State and local submittals on which these FIPs were modeled. The FIPs' greatest success will be a strong SIP developed with local industry, community and environmentalist input. We believe the public dialogue started by the FIPs and continued by courageous and committed citizens has brought us much closer to that goal.

c. California's SIP Submittals

Over the last year, CARB and the local air agencies have finalized substantial revisions to the SIP's technical foundations. Updated inventories and improved modelling have both contributed to lower estimates of the amount of emission

reductions needed for ozone attainment.

On November 15, 1994, after hard work with many of the same concerned groups, CARB submitted attainment plans for the various ozone nonattainment areas in the State using these generally lower emission reduction estimates. These plans consisted of: (1) locally adopted control measures and other plan components; (2) fully adopted CARB regulations for consumer products, reformulated gasoline, and clean diesel fuel; (3) commitments by State agencies to adopt rules and regulations in the future; (4) credit for national standards EPA is required to set under the Act; and (5) assignments to EPA to propose and adopt future national mobile source controls.

The State commitments fall into two categories. In the first category are well-defined commitments, to be met in the next few years, to adopt statewide measures achieving additional emission reductions from mobile sources, consumer products, and aerosol paints. In the second category are longer-term measures, allowed under section 182(e)(5) of the CAA for the South Coast portion of the State.

In addition to the national standards which the Act requires EPA to set, the State called upon EPA to use its discretionary authority and develop additional national controls for a variety of mobile sources. The State plans calls for EPA to set lower standards for heavy duty trucks and buses, nonroad engines of all kinds, commercial aircraft, locomotives and ocean going vessels.

3. Today's Actions

While CARB's submittals were a necessary and important step towards eliminating the court-imposed FIPs, they unfortunately do not relieve EPA of its obligation to promulgate the FIPs today. Only approval of the entire SIP attainment demonstration will relieve EPA of its FIP obligation altogether.

Despite the fact that the SIP attainment plans are not yet approved, EPA is taking every SIP measure approval action available to minimize the scope of the final FIPs. Where the SIP contains measures which meet the Clean Air Act's requirements for sufficiently enforceable and defined regulations, EPA is approving the SIP measures and not finalizing the alternative FIP measures we had proposed. In many other places, EPA is starting approval action today to ensure that CARB's commitments will meet the Act's requirements and replace the FIP measures before they go into effect.³ However, where there is no approvable replacement SIP action, EPA has no choice but to finalize FIP measures to complete the attainment demonstration for each of the FIP areas. As described above, these final FIP measures are designed so that they can be replaced by an approved SIP, before they become effective in February 1997.

The FIP measures are largely based on the SIP. Many of them mimic the rules CARB or the local air districts have committed to develop in the near term. There are some SIP programs under

³A full summary of all of the approval actions is contained in Section I.B.1 of this notice.

development or consideration which EPA could not use as models for the final FIP measures. Programs such as vehicle scrappage, VMT fees, and stationary source emissions trading require intensely local choices for their design, extensive enforcement resources, or funding which could not be provided by the Federal government. In these cases we have tried to design FIP measures which, while different than those chosen in the SIP, are easily replaced by the State or local agencies.⁴

4. Future Actions

EPA expects to determine, by April, 1995, whether the SIPs for each of these areas contain the minimum necessary elements and technical foundations upon which to base an approval or disapproval action.⁵ If the State plans are determined to be ready for full review, the Agency expects to begin rulemaking to approve or disapprove them by October of this year. The Act requires EPA to finalize an approval/disapproval action within one year of a determination that a plan is ready for full review.

EPA and CARB have already begun a series of meetings to share thoughts on what each agency should be doing to ensure this schedule stays on track and results in positive findings. While the regulators at all levels of government have pledged to work better together over the next few years, we cannot do it alone. The public input that has characterized development of the SIPs

⁴A summary of each of the measures finalized today is contained in Section I.B.2 of this FIP notice.

⁵This is known as the "completeness finding" which is required by Section 110(k)(1) of the Act.

and these FIPs is imperative to the continued progress toward clean air in California.

In addition, EPA will explore with the State the appropriateness and scope of future national standards. As described in Section III.B.1.d. EPA intends to proceed expeditiously in gathering the necessary data to initiate a rulemaking for national standards for heavy-duty trucks and nonroad engines.

When the SIP is approved, the FIP will be rescinded, just as we have begun to do today with approvals of several adopted SIP rules. See Section I.B.1.a. EPA designed the FIP around the SIP rules finalized today and thus they form a cohesive whole.

However, as future SIP rules are approved the FIPs may not so easily fit with the new State plans. For this reason, EPA has set the effective date so that the full SIP for each area can replace each full FIP.⁶ EPA is confident that the rapidity of the schedule for approval and the two year period before the FIPs become effective will ensure that the SIP will be the only clean air plan for California.

B. Detailed Summary of Today's Actions

1. Description of SIP Actions

a. Introduction.

⁶In cases where SIP measures are adopted and approved soon after today's promulgation, it may make more sense to rescind an individual FIP measure before a full FIP rescission. The State's near-term submittal of an inspection and maintenance (I/M) program is a good example. EPA will work with the State to decide on a SIP approval/FIP rescission schedule that works for each of the agencies as well as the regulated community.

EPA has throughout the FIP process placed emphasis on encouraging and supporting State and local SIP adoptions to reduce the scope of the final FIP as much as possible and to complete full SIP approval and FIP rescission as quickly as possible. The attainment demonstrations in the final FIPs rely on a substantially smaller Federal component than in the proposed FIPs because of SIP approvals taken in this notice or in separate prior rulemakings. EPA will continue to do everything within the Agency's authority to expedite SIP review and approval and FIP rescission.

In this document, EPA is acting expeditiously to approve and credit all of the State's rules recently submitted with the "1994 California State Implementation Plan for Ozone." In separate actions, EPA has already approved several new local rules (such as Sacramento's new rule for Bakeries), enabling EPA to eliminate several proposed stationary source rules from the final FIP.

In today's SIP actions, EPA is using streamlined avenues to speed approval of SIP measures and replacement of proposed FIP measures. EPA's "direct final" and "interim final" rulemaking actions allow for immediate rule approval but also provide for public involvement after the approval. In addition, EPA is taking final action today to approve CARB rules which were discussed in the proposed FIP but which had not yet been submitted as revisions to the SIP. EPA views approval of these SIP rules as not requiring further public comment, because SIP approval is the logical outgrowth of the discussion in the FIP

proposal. Expedited SIP rulemaking was requested by the State and it is also, EPA believes, in the public interest as supporting California's clean air progress and diminishing the scope of the final FIPs.

Section II of this document provides further details on each of the SIP actions summarized below, describing the SIP elements, citing applicable statutory and regulatory requirements, setting forth the basis for the SIP actions, and noting the impact of the SIP actions on the FIPs.

b. Final actions.

(1) Approval of CARB statewide measures.

In this document, EPA is taking final approval action on CARB's regulations for consumer products and antiperspirants and deodorants (see Section II.B.3.), and CARB's regulations for diesel fuel and reformulated gasoline (see Sections II.B.2 and III.E.). These regulations were adopted and amended over the past 5 years and were submitted as SIP revisions on November 15, 1994. Approval of these rules helps to complete the FIP attainment demonstrations, without the need for promulgation of comparable Federal measures.

(2) Action on the South Coast CO SIP.

In this document, EPA is taking final action on the South Coast CO SIP, as submitted by the State on December 29, 1994. EPA is approving the CO SIP with respect to the requirements for notice and adoption, baseline and projected emissions inventory, oxygenated fuels, clean-fuel vehicle fleet program, employee

commute options program (SCAQMD Rule 1501), and VMT forecasts. EPA is disapproving the plan with respect to the CAA requirements for: reasonably available control measures, attainment demonstration, quantitative milestones and reasonable further progress, VMT contingency measures, and TCMs to offset growth in VMT. As discussed in Section II.F., EPA anticipates that all of these CO SIP deficiencies will be remedied when the State submits and EPA approves regulations for an enhanced motor vehicle inspection/maintenance (I/M) program.⁷ The large emission reductions from an enhanced I/M program are essential for CO progress and attainment in the South Coast.

c. Direct final actions.

The Agency is approving here, without prior comment, CARB's opt-out from the Federal clean fleet provisions (see Section II.F.7.c.), and SCAQMD's Rule 1504 establishing a parking cash-out program as a contingency measure (see Section II.F.8.b.). EPA is approving these SIP revisions as direct final rules without prior proposal because the Agency views the rules as noncontroversial amendments and anticipates no adverse comments. Rationales for the approvals are set forth in the referenced sections, and a general discussion of direct final rulemaking appears in Section III.A.7.b.

Elsewhere in this Federal REGISTER, EPA is publishing

⁷The State is developing I/M regulations pursuant to a Memorandum of Agreement between Cal/EPA Secretary James Strock and EPA Administrator Carol Browner. The State is expected to submit I/M regulations to EPA by June 1995.

proposed rulemakings to provide the public with a 30-day opportunity to comment on these direct final SIP actions. If no adverse comments are received, no further activity is contemplated in relation to these rules. If EPA receives adverse comments within the public comment period on one of the direct final actions, that direct final approval will be withdrawn and all public comments received will be addressed in a subsequent final rule.

d. Interim final actions.

EPA is taking interim final action to approve six new technology measures adopted by CARB and five new-technology measures adopted by SCAQMD, as authorized by section 182(e)(5) of the Act. These approvals enable EPA to significantly reduce the magnitude of the proposed FIP's new technology measures for the South Coast. For a discussion of the interim final rulemaking approach, see Section III.A.7.a. For a discussion of the CARB and SCAQMD new technology measures and their relationship to the South Coast FIP, see Sections II.E.4., III.B.5.d., and III.F. Although these interim final SIP actions are effective upon publication, EPA invites public comments on the approval actions. Under the Administrative Procedures Act (APA), interim final rules are final for the interim period lasting until the Agency takes further action following consideration of post-promulgation comments, and during this period people may challenge these rules in court. Public comments must be submitted in writing to EPA at the address indicated at the beginning of this document on or

before July 14, 1995.

e. Proposed approvals in separate actions.

Elsewhere in this FEDERAL REGISTER, EPA is publishing proposed approval of the State's enforceable commitments to adopt regulations to achieve massive further reductions from mobile sources and consumer products. The State's new measures are part of the California 1994 Ozone Plan, which was adopted and submitted on November 15, 1994. EPA is proposing to approve the State's commitments under section 110(k)(3) and 301(a) of the Act because they strengthen the SIP and EPA wishes to do everything possible to assist and encourage the State to develop these commitments into regulations. EPA intends to expedite full SIP approval of the regulations following State adoption, at which time the California SIPs will receive the emissions reduction credit associated with the rules and the FIPs will be adjusted accordingly.

The CARB commitments proposed for approval today are: Measure M3, Accelerated Ultra-Low Emission Vehicle (ULEV) requirement for Medium-Duty Vehicles (MDVs); Measure M5, Heavy-Duty Vehicles (HDVs) -- NOx regulations for a 2.0 gram per brake horsepower-hour Nox exhaust emission standard for new engines or alternative measures which achieve equivalent or greater reductions; Measure M8, Heavy-Duty Gasoline Vehicles (HDGVs) -- lower emission standards based on application of 3-way catalyst technology; Measure M11, Industrial Equipment, Gas & LPG, between 25 and 175 horsepower -- lower emission standard based on three-

way catalyst technology; and Measure CP-2, Mid-Term Consumer Products regulations.

Finally, the FIPs rely on reductions achieved by the State's fully adopted regulations for off-highway recreational vehicles and engines, and for lawn and garden and utility equipment engines. These rules have been submitted to EPA for a waiver from the Clean Air Act's general prohibition on State adoption of standards relating to the control of emissions from new motor vehicles and nonroad engines. CARB's submittal appears to meet all requirements for that waiver. See Sections II.B.2.a., III.D.4.b., and III.D.4.d.

f. Completeness determinations on California SIPs.

Before EPA may act upon SIP submittals, the Act requires that EPA determine that they are complete submittals, or that they have become complete by operation of law. All but two of the SIP elements proposed for approval into the SIP today were found to be complete on January 30, 1995, pursuant to EPA's completeness criteria that are set forth in 40 CFR Part 51 Appendix V. SCAQMD Rule 1501 became complete, by operation of law, on January 8, 1995. CARB's antiperspirants and deodorants and consumer products regulations were found complete on January 13, 1995.

In the near future, EPA expects to issue completeness determinations on the remainder of the State and local ozone plans and plan elements submitted in November and December 1994. EPA will make every effort to assist the involved State and local

agencies to ensure that all of the applicable statutory requirements for the ozone plans are met so that the plans can be quickly and fully approved. If the plans are found complete, the Agency expects to propose action on the ozone plans later this year, at which time the public will have an opportunity to comment on EPA's approval action and associated FIP rescissions.

2. Description of Final FIP Contents.

a. Attainment deadlines.

The FIPs promulgated today are designed to attain the NAAQS by the applicable deadlines in the Clean Air Act. Under the Act, each ozone and CO nonattainment area is classified according to the extent of its pollution problem, with an attainment deadline corresponding to the classification. The South Coast is classified "Extreme" for ozone (with a 2010 attainment date) and "Serious" for CO (2000 deadline); Ventura is "Severe" for ozone (2005 deadline); and Sacramento, which was "Serious" at the time of the FIP proposal, is today reclassified to "Severe," in response to a request by the State. As EPA argued in the FIP proposal, the "bump-up" reclassification of Sacramento allows both the SIP and the FIP to avoid recourse to harsh measures that would have been needed if the area had remained subject to the 1999 attainment deadline for "Serious" ozone areas. It does however, require the Sacramento agencies to adopt some additional regulations required by the Act (see Section III.B.3.).

The preparation of attainment plans involves the development of pollutant emissions inventories for the base year and the

attainment year, mathematical modeling to correlate emissions with ambient concentrations, identification of pollutant emission reductions needed to attain the NAAQS, selection of control strategies to achieve these reductions, and development of regulations to implement the strategies. The following overview proceeds in that sequence, highlighting changes made in these final FIPs in response to public comments, progress made by State and local agencies since the proposal, and further EPA analysis.

The reader may consult Section III.G. for additional technical information on the attainment demonstrations, Section III.B. for particulars on the FIPs for each area, and Sections III.C. and III.D. for extensive discussions of each of the FIP control measures. A still greater level of detail on each of these measures may be found in the technical support documents associated with this rulemaking.

b. Attainment demonstrations.

(1) Emission inventories.

The proposed FIPs were largely based on inventories compiled by CARB and the local agencies. This approach was emphatically supported by the great majority of the public comments, which agreed with EPA's decision to employ State and local data to avoid confusion, endorse SIP planning efforts, and promote the ultimate replacement of the FIPs with the SIPs.

The final FIPs continue to rely primarily on CARB, SCAQMD, Ventura County Air Pollution Control District (VCAPCD), and Sacramento agency inventories, which have been updated and

corrected for inclusion in the 1994 ozone SIPs and the revised South Coast CO SIP. As a result of extensive CARB-EPA coordination following the proposal, the final FIPs now generally use California's EMFAC7F model rather than EPA's own CALI5 model for computing motor vehicle emissions. There are now no notable discrepancies between the FIP and the current State and local inventories.

(2) Modeling and reduction targets.

In order to relate emissions levels to ambient pollutant concentrations, EPA continues to use the sophisticated modeling analyses developed cooperatively with CARB and the local agencies. Since the time that modeling was finalized for the FIP proposal, however, revisions to the Urban Airshed Model (UAM) inputs and in the South Coast, strategic changes have modified the final estimates of emission reductions required for ozone attainment. Due to changes in both baseline and projected inventories, in some cases the required percentage reduction in emissions has increased since the proposal. However, the absolute amount of required reduction of VOC and Nox has fallen for each of the three areas.

(a) Sacramento. In Sacramento, the 1994 SIP and the final FIP aim for a 39 percent reduction in VOC and a 40 percent reduction in Nox from the 1990 emissions levels, compared to the proposed FIP's 40 percent VOC and 30 percent Nox reduction targets. The changes result from improvements both to the modeling and the emissions inventories.

EPA received relatively few comments on the Sacramento attainment analysis, the majority of these expressing concern that air quality planning in Sacramento needs to more closely reflect the impact of transport of pollution into the Sacramento area. EPA agrees with these comments and is participating with CARB and other parties in meso-scale modeling being performed for the San Joaquin Valley Air Quality Study, which encompasses the San Joaquin Valley, San Francisco Bay Area, and Sacramento Valley. EPA believes, however, that the control requirements in the final FIP are needed whether or not there is pollutant transport, since they are based on meteorological conditions lacking significant pollutant influx.

(b) Ventura. In Ventura, approximately a 46 percent reduction for VOC and 49 percent for Nox appears to be necessary for ozone attainment by 2005. The reduction requirements in the proposed FIP were 40 percent for both VOC and Nox. The new reduction targets were developed and adopted by the VCAPCD and CARB, and reflect various recent enhancements to both the emissions inventories and modeling.

(c) South Coast ozone. Significant changes were made in the SCAQMD's ozone attainment demonstration following release of the proposed FIP. The modeling analysis has remained virtually unchanged but, at the intervention of the City of Los Angeles, the SCAQMD elected to make a significant shift in the direction of control.

The proposed FIP followed the SCAQMD's historic approach of

selecting integrated emission reduction targets best designed to attain all of the NAAQS. The South Coast Air Basin (SCAB) experiences especially frequent and severe violations of the particulate matter (or PM-10) NAAQS. Nox is thought to be a major contributor to these dangerous levels of PM-10 in the SCAB, and therefore South Coast Air Quality Management Plans (AQMPs) have generally required reductions in Nox emissions beyond those that may be needed for ozone, in order to attain the PM-10 NAAQS.

During the 1994 AQMP adoption hearings, the City of Los Angeles argued successfully that this plan should focus on ozone attainment, and that the SCAQMD should postpone, for further analysis, the selection of PM-10 reduction targets and control strategies. Accordingly, the 1994 AQMP was redesigned to demonstrate ozone attainment with a 79 percent reduction in 1990 VOC emissions and a 59 percent reduction in Nox, compared to the draft AQMP's targets of 88 percent VOC and 71 percent Nox.⁸

Following this amendment to the AQMP, EPA received comments opposing the new SCAQMD reduction targets, and urging that the final FIP retain the previous integrated ozone/PM targets and thus contribute to cost-effective, comprehensive air quality planning. Most comments, however, urged EPA to reduce the ozone FIP impacts by using the new targets.

In order to support local planning decisions and facilitate SIP approval and FIP replacement, EPA has elected to make the

⁸Since the 1990 baseline SCAB emissions levels are frequently updated, the computed percent of required reductions from the baseline fluctuates slightly.

final FIP consistent with the new AQMP and its revised targets. Most notably, these revised targets have allowed EPA to scale back the number of long-term measures which would be developed under section 182(e)(5) of the Act. Nonetheless, EPA shares the concerns of the commenters that still greater emphasis be placed on preparation of a successful particulate matter SIP. EPA is working closely with CARB, SCAQMD, the City of Los Angeles, and other involved parties to ensure that an effective particulate matter attainment SIP is developed and submitted (as the Act requires) in early 1997.

(d) South Coast CO. After the FIP proposal was published, the SCAQMD and CARB revised the CO emissions inventory to use updated projections of vehicle miles traveled, CARB's revised motor vehicle emission factors in the EMFAC7F model, and higher nonroad engine emissions estimates. Because of this, both the 1990 and 2000 SIP emissions inventories have greatly increased, but the modeled reduction targets in CO emissions have declined from 45 percent in the proposed FIP to 39 percent in the final FIP. EPA's CO attainment demonstration in the final FIP continues to rely on the most recent of SCAQMD's UAM and hotspot modeling analyses.

c. Control strategies and final FIP regulations.

EPA made many adjustments to the control strategies for the final FIPs based on copious input from the public and affected sources; technical corrections to the attainment targets, emission inventories, and control factors; new State and local

plans, draft rules, adopted rules, and SIP submittals; and additional EPA analyses. The following overview provides a brief survey of the FIP stationary and mobile source measures, highlighting the more significant changes made in each rule.

(1) Stationary and area source measures.

Two changes made in the final FIPs apply generally to all of the stationary and area source rules, and are not repeated in the rule-by-rule summaries. First, EPA has shifted implementation dates so that no compliance obligation falls earlier than May 15, 1997. As discussed above, EPA believes that this should allow time for full SIP approval and FIP replacement before any source must comply with the FIP. Second, EPA has reduced from 5 years to 3 years the record maintenance requirements for owners and operators of subject sources. These two changes accommodate widespread requests from commenters on individual rules.

The final FIPs contain five types of stationary and area source rules: (1) regulations for specific sources; (2) regulations for specific source categories; (3) statewide area source measures; (4) stationary source regulations that cap emissions and require annual reductions; and (5) new technology measures for the South Coast.

(a) Rules for specific sources. The proposed FIP for Sacramento included regulations for 4 specific sources: **Formica Corporation** (a plastic laminate product plant in Placer County), **SierraPine Limited** (a fiberboard plant in Placer County), **Michigan-California Lumber** (a timber products plant in El Dorado

County, now under the ownership of Sierra Pacific Industries), and **Reynolds Metal** (a tab can end plant in Placer County). At the time of the proposal, the existing SIP did not include regulations for these industrial sources as stringent as the national requirements for reasonably available control technology (RACT). EPA proposed rules that establish VOC limits consistent with reasonably available technology. EPA is not finalizing the rule for Formica Corporation, because Placer County has adopted, and EPA has already approved, a comparable SIP rule. The remaining 3 rules are being issued without significant change.

(b) Rules for specific source categories. EPA is finalizing the proposed rule for regulating VOC emissions from **solvent cleaning operations** in Sacramento, but with amendments to clarify the rule and to accommodate concerns about the availability and suitability of very low-VOC solvents. Similarly, the proposed **wood products coating** rule for Sacramento and Ventura is retained, but with amendments responsive to commenters arguing that some of the VOC limits (such as for coatings used to refinish wood previously finished with oils) were too stringent.

The proposed **automotive refinishing operations** rule for Sacramento required either use of low-VOC coatings or control through add-on equipment. Commenters questioned whether some of the limits were feasible at this time. EPA concurs and has raised the VOC limits and removed some of the coatings categories in today's final rule. The proposed **adhesives and sealants** rule

for Sacramento also required use of low-VOC products or add-on controls. The rule is issued with essentially the same requirements but with several clarifying amendments responsive to public comments.

EPA is not finalizing the proposed **can and coil coating** rule for Sacramento, since the counties lacking a comparable rule also appear to lack such facilities. EPA is also not issuing the **commercial bakeries** rule for Sacramento, since the SMAQMD recently adopted, and EPA has already approved, a comparable rule.

The proposed **municipal waste landfills** rule required gas collection systems for large landfills in Sacramento. EPA is issuing the final rule but with minor changes suggested by Sacramento Metropolitan Air Quality Management District (SMAQMD).

In response to commenters' concerns about the rule's feasibility and impact on ozone concentrations, EPA is not finalizing the proposed **livestock waste** rule but is instead participating with the involved State and local agencies and dairy operators in further studies, which may culminate in successful SIP rules.

EPA proposed two rules on control of **fugitive emissions** to reduce VOC leaks from the petroleum and gas industry. Both rules have been amended to provide greater flexibility to industry, to slightly decrease the stringency of standards and sources covered in Sacramento and Ventura, and to address industry concerns about the present feasibility of the proposed leak standards. EPA will

also work with California air agencies and industry to resolve differences in the estimate of emissions from certain fugitive sources and/or components.

EPA is finalizing the proposed **gasoline transfer and dispensing** rules, which are designed to increase the efficiency of existing vapor recovery systems at service stations. Following the proposal, EPA has made minor changes to improve the flexibility of the rules and most of the local air agencies have taken steps to adopt their own rules.

In response to extensive comment on the proposed **waste burning** rule, which prohibits burns on days when ozone violations are predicted, EPA has amended the rule to exempt burns for fire hazard reduction or ecosystem management. Because substantial negative comment was received and the reductions are no longer needed in Sacramento, EPA has changed the rule to apply only in the South Coast and Ventura.

Because very few comments were received on certain Nox rules proposed for the Sacramento FIP area, only minor changes were made to the **residential water heaters** rule, which prohibits sale of heaters emitting Nox above a specified level per joule of heat output, and the **large and small boilers/generators/process heaters** rules, which limit Nox emissions through available control technology and/or combustion modification.

EPA proposed three other Nox rules for stationary sources in the Sacramento area. In most cases, Sacramento local air agencies are in the process of adopting comparable Nox rules that

will allow SIP replacement of the FIP measures. The **stationary internal combustion engine** rule is designed to reduce Nox emissions through application of available control technology. EPA is finalizing the proposed rule with changes to increase the rule's flexibility and slightly relax emission standards, particularly for small engines. EPA is finalizing the proposed rule for **gas turbines** but with modified and slightly less stringent standards. In the Sacramento area, EPA also proposed a rule to reduce Nox emissions by 50 percent from **biomass boilers and steam generators**. The rule is being finalized today with minor revisions.

(c) Rules for statewide area sources. EPA proposed a statewide rule to phase in lower VOC limits for most **architectural coatings**, one of the largest remaining categories of nonmobile VOC emissions in the FIP areas. EPA received important comments both supporting and opposing the limits in the proposed rule and the rule's statewide applicability. Other comments questioned whether the rule should be issued at this time before EPA has issued national regulations under the regulatory negotiation process of the past two years. EPA has made numerous modifications to the rule, such as extending compliance dates and relaxing standards for certain coating categories, but has concluded that the rule should remain in the FIP at this time and should apply statewide to ensure that the critical emission reductions associated with the rule are not undermined by circumvention should the rule apply only in the FIP

areas.

As discussed in section I.B.1., EPA's proposed **consumer products** rule is not being finalized, since CARB has submitted, and EPA today is approving, the State's comparable regulations. Since CARB has not yet adopted and submitted its own **aerosol paints** rule, however, EPA is finalizing the proposed FIP aerosol paints rule. The rule has been amended to reflect the latest draft CARB rule as closely as possible, in order to promote replacement of the FIP rule by SIP approval and eliminate unnecessary confusion for the industry. EPA intends to coordinate with CARB, manufacturers, and users to ensure effective compliance with the future VOC limits.

EPA proposed a **pesticides** rule that requires manufacturers of agricultural and structural pesticides to analyze the VOC content of their products and report to EPA. The Agency proposed to establish a VOC limit to reduce pesticides emissions by 20-45 percent. EPA is finalizing the rule with a 30 percent reduction requirement. In response to numerous commenters, exemptions were added for pheromones and emergency pesticides use. EPA intends to continue to work with the involved State and local agencies and the regulated community to ensure that the FIP rule is replaced by approval of a SIP substitute.

(d) Stationary source cap rules. EPA proposed rules for each FIP area that would establish declining emissions cap rules for stationary sources emitting at least 4 tpy. Sources would be required to submit compliance plans in 1999 and reduce their

emissions annually by up to 45 percent from baseyear levels. EPA proposed VOC cap rules for all three areas, and Nox cap rules for Ventura. At the time of the FIP proposal, EPA hoped to be able to finalize SIP approval of the SCAQMD's comparable Nox RECLAIM rule, rather than finalize a Nox cap rule for the South Coast. Based on the final reduction targets, cap rules are no longer needed in Sacramento and Ventura. For the South Coast, EPA is retaining the VOC cap rule and is also issuing an interim final Nox cap rule, since approval of the RECLAIM program is not yet complete.⁹ EPA invites further public comment on the interim final South Coast Nox cap as described in Section I.C.

EPA anticipates that both the Nox and VOC cap rules can be replaced by SIP approvals of comparable SCAQMD programs. Most commenters expressed a preference for this outcome, and EPA will continue to assist SCAQMD's SIP efforts. Many commenters also asked that EPA add a trading component to the cap rules in the event that the FIP rules were ever to be implemented. EPA's resources are insufficient for the difficult task of establishing and managing complex trading programs. EPA believes that the Agency's best role is to support the SCAQMD in its development of a VOC RECLAIM program, which includes a trading component intended to reduce compliance costs and increase flexibility.

(e) New-technology measures in the South Coast. The Act

⁹EPA is proposing conditional approval of the Nox RECLAIM program in a separate notice. EPA expects that SCAQMD modifications to the program will allow full approval of the program and rescission of the comparable FIP rule in the near future.

allows "Extreme" ozone areas to include in the attainment demonstration conceptual measures that depend upon new technology or control techniques. The FIP proposal relied on this option to achieve substantial VOC and Nox reductions from all source categories beyond what could be accomplished at this time through complete regulations. In the November 1994 SIPs, both CARB and SCAQMD included new-technology measures. EPA is today approving these measures in interim final action, and in large part replacing the proposed FIP's new-technology controls with the approved SIP provisions.

(2) Mobile Source Measures.

(a) Programs for on-highway vehicles.

(1) Light-duty vehicles (passenger cars). EPA proposed in-use standards and recall provisions aimed at ensuring that California vehicles maintained the low emissions levels required by the California Low Emission Vehicle (LEV) program. EPA is not finalizing these measures because it believes that CARB's LEV, clean fuels and on-board diagnostic control programs, in combination with an enhanced inspection and maintenance program (I/M) will achieve equivalent control.

EPA also proposed an enhanced inspection and maintenance (I/M) program to ensure vehicles are well maintained and continue to meet their emissions limits throughout their useful lives. The State is developing its own I/M program and is expected to submit it to EPA by June, 1995. In the interim, for purposes of meeting EPA's court-ordered deadline, EPA has finalized an I/M

program. However, EPA has set the compliance dates of its final I/M rule to ensure that the State's program can be developed and approved before EPA would need to begin work to implement the FIP I/M program. Consistent with the other FIP measures, the FIP I/M program is intended only as a backstop until the State's replacement rule can be approved.

The FIP proposal also would have prohibited California residents from purchasing used cars in other states and bringing them into California. While many commenters supported this as a necessary complement to the State's motor vehicle program, a number of people were concerned about the inclusion of antique, historic and specialty vehicles. Therefore, this program is being finalized with some exceptions for these types of vehicles which are driven only occasionally.

EPA proposed that certain fleet owners of passenger cars and trucks acquire inherently low emitting vehicles (ILEVs) as a percentage of their new vehicle purchases. ILEVs are vehicles with no evaporative emissions. This program was supported by many commenters as a mechanism to accelerate introduction of alternative fueled vehicles. EPA is finalizing this program as proposed for the Ventura and the South Coast FIP areas. The rule will apply to fleet truck purchases within one year after the program goes into effect for passenger cars.

In order to address travel activity growth in the FIP areas, EPA proposed to require employers in each of the FIP areas to offer employees the cash equivalent of any parking benefit

provided, and to require employers in the Sacramento area to develop Employee Commute Options (ECO) plans. EPA has withdrawn the parking cash out proposal because the anticipated change in the federal tax code was not enacted. Since the State has today been granted its request for a reclassification of Sacramento to a "severe" nonattainment area, the Act's requirement to implement an ECO program is clearly the State's responsibility. EPA is deferring to the State and local air agencies the obligation to enact (ECO) rules rather than finalizing the proposed Federal measure.

(2) Medium-duty vehicles. In the proposed FIPs, EPA sought to accelerate CARB's phase-in of tighter emissions standards for medium-duty vehicles such as large minivans. CARB and vehicle manufacturers suggested a more moderate acceleration schedule in their comments on the proposal. In its November 1994 ozone SIP submittals, CARB included plans for its preferred accelerated phase-in schedule. EPA today is finalizing a medium-duty phase-in schedule consistent with CARB's plans. In addition, in response to comments and consistent with CARB's plans, EPA is delaying implementation of the program for small volume manufacturers until the final year of the phase-in (2002).

(3) Heavy-duty onhighway vehicles (trucks and buses). For this category of vehicles, EPA proposed very tight emissions standards and several requirements designed to ensure that in-use trucks and buses comply with the standards and that companies continue to purchase new vehicles at past rates. This program,

and a one-stop, two-stop compliance alternative, was proposed to apply to interstate truck fleets operating in California as well.

Most commenters considered the proposed emissions standards to be too stringent and compliance dates to be too soon. Further, EPA received many comments stating that because trucking is an interstate transportation mode, national truck emissions standards are the only way to achieve real control over this category. While EPA acknowledges the practical value of promulgating national standards rather than California-only standards, EPA is not today promulgating new national truck standards. The Clean Air Act forbids any additional national truck Nox standards from going into effect before 2004¹⁰, and EPA believes it is inappropriate to hastily develop national standards for such a large sector of the economy within the context of a court-ordered plan aimed at a single State.

With the input of a wide array of the same interest groups which commented on the FIP proposals, CARB has committed to adopt less stringent truck standards than those offered in the proposed FIPs. CARB's planned standards would also become effective later than the proposed FIP standards. EPA is today finalizing California-specific engine standards and compliance dates consistent with CARB's planned program to implement new standards in 2002. In addition, EPA is beginning discussions with interested parties and gathering the necessary data to undertake

¹⁰Under the Clean Air Act, a new national truck Nox standard is set to go into effect in 1998.

the development of a national control program consistent with the California program. EPA expects to take initial steps via an Advance Notice of Proposed Rulemaking in June 1995.

EPA believes that the standards promulgated today for trucks in California can be met with diesel engines by 2002 or shortly thereafter. Because diesel engines have historically maintained their emission standards in-use, there is less need to finalize the strict in-use compliance elements included in the FIP proposal. As a result, EPA has relaxed the in-use measures for trucks and buses. Further, by finalizing a less stringent and less costly standard, EPA has minimized the need to enforce past turnover rates through regulation. Therefore, EPA is not finalizing its proposed fee-enforced fleet averaging programs.

EPA final rules will only apply to trucks registered through the California Department of Motor Vehicles or its International Registration Program because EPA data indicate that interstate truck fleets are generally newer and better maintained than California-based fleets. Today, an average interstate truck is cleaner than an average California-based truck. Given current and potential future national standards, EPA believes interstate fleet turnover will be sufficient to achieve emission reductions similar to those expected to be achieved as a result of the FIP measures promulgated today. Therefore, EPA is not finalizing the proposal to apply the FIPs' truck program to interstate fleets nor the one-stop, two-stop compliance alternative.

(4) Motorcycles. EPA proposed significant new standards

for motorcycles in California. Since the FIP proposal was released, California has adopted and submitted to EPA for a waiver from federal preemption its new motorcycle and recreational vehicle standards. EPA can rely on these California regulations for the FIPs' attainment demonstrations and therefore is not finalizing the FIP measures proposed for this category.

(b) Programs for nonroad vehicles and engines. Currently, a number of national and California standards are in place or planned for a wide variety of nonroad vehicles and equipment. These include rules for nonroad heavy-duty engines such as those in used backhoe loaders, small nonroad equipment such as lawnmowers and weed whackers, nonroad motorcycles and recreational vehicles, and marine engines. Some engines, such as those in forklifts, are neither currently regulated nor required to be regulated. In the FIP proposals, EPA relied upon existing California standards and the Act's mandated future national standards as much as possible. These were supplemented with additional FIP measures where further reductions were necessary.

(1) Marine engines. EPA proposed to rely on the reductions that will be achieved by the national rule the Act requires EPA to promulgate for recreational marine engines. Commenters supported this approach. EPA proposed this national standard in November 1994, and will continue to rely on its projected emission reductions in the final FIPs.

In addition, EPA proposed a fee on the use of older, dirtier marine engines in the FIP areas. Commenters strongly opposed the

fee and supported an engine scrappage program instead. A scrappage program is currently being developed at the national level. EPA supports the development of such programs at the local level as well. EPA today is not finalizing the fee program because of the potential negative economic impact it may have on certain marinas, and because new data indicate that reductions from this category are not necessary in Sacramento and Ventura.

(2) Small nonroad equipment. In the FIP proposal, EPA relied on emissions reductions from existing California rules and the Act's required future national rules on small nonroad equipment such as lawnmowers, power saws and weed whackers. The required national rules will be developed in two stages. In the first stage, EPA aimed for a national rule very similar to CARB's existing program but extended it to cover engine categories which California is preempted from regulating. This national rule was proposed in May 1994, and is scheduled to be finalized in May 1995.

The second stage of the national program to control emissions from small nonroad equipment is underway through a regulatory negotiation. The final rule from this stage should be completed in 1997. Taken together, the two phases of the national rulemaking are projected to achieve an enormous reduction in total hydrocarbon emissions from these types of nonroad equipment. EPA received generally positive comments on this approach and is relying on the projected emissions reductions from the upcoming national standards in the final

FIPs.

(3) Nonroad motorcycles and recreational vehicles. To achieve reductions from this category, EPA's FIP proposal extended the proposed onhighway motorcycle standards to new nonroad motorcycles and recreational vehicles such as dirt bikes, all terrain vehicles and go karts. Commenters opposed the projected implementation dates of the measures and objected to the stringency of some of the emissions standards. Since the FIP proposal, CARB has enacted standards for these vehicles that result in the same emissions benefits as EPA proposed in the FIPs. As in other mobile source categories, CARB has applied for a waiver of federal preemption of its regulations. EPA can rely on CARB's regulatory program and therefore is not finalizing the FIP nonroad motorcycle and recreational vehicle proposals.

Further, EPA, CARB and the motorcycle industry agree that additional long term reductions from this source category may be achieved through control of evaporative and off-cycle emissions. EPA will further explore control of these emissions in the context of upcoming national rules which EPA will promulgate for this category.

(4) Heavy-duty nonroad equipment. EPA proposed to rely on upcoming required national standards to achieve reductions from large heavy-duty nonroad engines. This national standard would have the effect of extending California's existing standards to cover other large engines which the State is preempted from regulating such as those used in backhoe loaders and combines.

Commenters supported this approach and EPA finalized this national standard in June 1994.

In addition to this national standard, EPA proposed to set very tight standards for engines of this type used in the FIP areas. EPA also proposed several requirements designed to ensure that these engines comply with the standards in-use and that equipment users continue to purchase new equipment at past rates. These programs were equivalent to those proposed for heavy duty trucks. As with the truck proposal, commenters objected to the stringency and compliance schedule proposed for the engine standards. Further, commenters supported further national standards rather than standards set specifically for equipment used in the FIP areas.

While EPA is considering setting additional tighter national standards for heavy-duty nonroad engines, it would be improper to set them within the context of a FIP. The final FIPs' engine standard has been delayed and relaxed in response to the concerns raised by engine manufacturers and equipment users. EPA will then use this standard as a starting point for discussions at the national level.

The engine standards promulgated today can be met with diesel engines which, as discussed in the truck section above, have historically maintained their emission standards in use. As a result EPA is not finalizing the programs designed to achieve this same end. Additionally, the relaxed, less costly final standard obviates the need for a program to ensure

continued replacement of old equipment. Therefore, EPA is not finalizing its proposals for in-use performance enforcement or equipment replacement.

(c) Programs for national transportation sources and federal activities. The litigation which resulted in the promulgation of the FIP today arose in part from the South Coast Air Quality Management District's (SCAQMD's) concern that regulation of emissions from "federal sources" such as airports, ships and locomotives was not keeping pace with controls on other Southern California sectors. The FIP proposal sought to achieve appropriate emission reductions from these sources by including controls for airports and aircraft, locomotives, large marine vessels, and military installations. These provisions were some of the most controversial measures in the proposed FIP and nearly all commenters, including the SCAQMD, supported some relaxation in the proposed programs. EPA's extensive public outreach forums and efforts to engage all sectors in proposing alternative control strategies resulted in major changes to some of these most controversial measures.

(1) Commercial aircraft and airports. To control emissions from this sector, EPA proposed a program which required airlines to achieve a similar level of NOx and HC reductions from all airline operations as that required of stationary sources in the area. Commenters raised major objections to the proposal, maintaining that reductions of the magnitude proposed could not currently be achieved through technological improvements in

aircraft nor through improved operational efficiency. Commenters concluded that airlines would be forced to curtail significantly the number of flights in order to achieve the proposed reductions. These commenters pointed out that Los Angeles International Airport (LAX) in particular is a major engine for commercial growth in Southern California.

These grave concerns about the potential harm the proposed regulation could have on the regions' economies caused EPA to significantly alter the airport rule. EPA has instead incorporated alternative control strategies suggested by commenters and the rule finalized today will require the conversion of nearly all ground service equipment to zero emission technologies (e.g. electric technologies) and to minimize the use of aircraft auxiliary power units. Because today's action is significantly different than the original proposal, EPA is issuing it as an interim final action and will provide an opportunity for further public comment as described in Section I.C.

In addition, EPA is beginning work to add newly adopted International Civil Aviation Organization (ICAO) NOx emissions standards for aircraft to existing national standards. EPA will also work with the ICAO to increase the stringency of international aircraft emission standards.

(2) General aviation. EPA included a proposal to control emissions from general aviation (private planes) as part of its goal to have all sectors contribute to California's clean air

attainment efforts. EPA's proposal sought to reduce emissions from general aviation by requiring the payment of a small fee per take-off in order to discourage flying in the FIP areas.

EPA received many comments confirming that a take-off fee would discourage the number of flights in the FIP areas. But commenters also raised concerns that reducing flying time for individual pilots might have safety repercussions because pilots require practice to maintain their skills. In addition, many small businesses, such as crop dusters, indicated that reduced flying would cause severe economic hardship for their companies. Commenters noted the difficulties EPA would face in administering the program as well. Finally, commenters questioned the need for such a regulatory program given current statistics showing a natural reduction in the number of flights within the State.

In response to these and other comments, EPA is not finalizing the take-off fee. However, other comments received indicate that this sector can and should reduce emissions through basic changes in refueling and other operations. Therefore, EPA is working with the Federal Aviation Administration and private pilot associations to develop training in low emission operation and refueling controls.

(3) Ships and ports. To reduce emissions from ships in Ventura and the South Coast, EPA proposed a fee and discount system to try to encourage the use of low emission ships, cold ironing while in port, and avoidance of the Ventura coast when traversing from and to the Northwest. Commenters suggested that

the formula used to calculate the fee did not reflect actual ship emissions, that the very existence of such a fee program would drive shipping to other ports, and that most ships could not take advantage of the cold ironing and clean ship discounts.

Several interested commenters, including shippers and the Los Angeles and Long Beach ports, developed an alternative proposal which would provide an equivalent level of reduction through operational changes such as speed limits, changed shipping patterns, restricted cold ironing, international standards, and port improvements. The bulk of the reductions achieved by this alternative were attributed to changing vessel routing patterns. The Department of the Navy expressed concerns about the proposed alternative shipping route and its potential impact on the Point Mugu Sea Test Range. Because of these concerns and the need to gather additional information regarding current shipping routes and schedules and ship emissions rates, EPA is deferring a determination of the detailed measure(s) necessary to reduce the majority of the necessary emissions reductions from this sector pending the outcome of a study to be finalized by August 1997.

However, many of the other elements of the alternative program are being promulgated today. EPA believes that State and local air agencies have the authority to enact and enforce these same measures. In addition, EPA is actively participating in the International Maritime Organization (IMO) process to set new international ship emission standards.

(4) Locomotives. For locomotives, EPA proposed to rely on the projected emissions reductions from national locomotive standards mandated by the Act. EPA will consider the comments received on the locomotive standards described in the FIP proposal in the context of the national rulemaking process. These national standards will likely apply to new and remanufactured locomotives and will achieve reductions in NOx sufficient for Sacramento and Ventura attainment. In the South Coast, required reductions are substantially more significant and therefore the national standard alone will be insufficient.

EPA therefore proposed for the South Coast a fleet averaging program which required significant turnover in locomotives by 2010. Commenters suggested that the fleet average program proposed was so stringent as to be a new engine standard. In addition, CARB in its 1994 SIP submittal, supported a program that would require the emissions average of the South Coast locomotive fleet to equal the expected national standard for new locomotives. EPA is therefore finalizing a somewhat relaxed South Coast program aimed at meeting CARB's fleet average goal and achieving a 65 percent reduction in emissions.

(5) Military sources. EPA proposed an emission reduction program for mobile sources on military bases which required reductions similar to those required of stationary sources in the region. The military was given great flexibility to choose how to reduce emissions from all mobile sources on bases in the FIP areas. Military vessels and airplanes were exempt from this

program in response to Department of Defense national security objections. In addition, stationary and source emissions on FIP area military bases were subject to all of the proposed FIP measures described in I.B.2.(c)(1).

Few comments were received except from the military which opposed any requirements on any equipment which was tactical, broadly defined. The military claimed that world wide deployability required that there could not be different, low emitting mobile source equipment in California. EPA is deferring to the concerns raised by the military and will not finalize the unique mobile source program for military bases. However, EPA has worked with the military and they have acknowledged that their vessels will comply with the ports' shipping alternatives EPA is promulgating today. They will undertake several other independent emissions control projects in the area which will achieve further emission reductions in the FIP areas. Finally, the stationary source measures promulgated today will apply to applicable emissions on military bases as well.

C. Public Process

As described above, this document includes five interim final FIP and SIP actions. In order to comply with the court-ordered deadline for the California FIPs, EPA is invoking the good cause exception under the Administrative Procedures Act to allow for issuance of interim final FIP rules and SIP approvals without first providing an opportunity for comment before these actions take effect. Although these actions are considered final

upon publication, in this document EPA invites comment and will hold a public hearing on the interim final FIP actions taken in this document.

Because SIP measures are developed with the benefit of public hearings at the State and local level, EPA will only take written public comments on the interim final SIP actions. Comments on the interim final SIP approvals must be submitted to the address indicated at the beginning of this document on or before July 14, 1995.

Under the APA, interim final rules are final for the interim period lasting until the Agency takes further action following consideration of the post-promulgation comments, and during this period, people may challenge these rules in court. Section III.A.7.a. discusses the interim final rulemaking approach and the basis for post-final public involvement opportunities.

Specifically, EPA is providing the public with a chance to comment on two changes made in the final FIPs, as well as two SIP approvals and a waiver. The FIP changes, which are summarized above in Section I.B.2., relate to airport controls and a NOx cap rule for stationary sources in the South Coast. The interim final SIP approvals address recent California submittals that now allow EPA to substitute State and local measures for certain of the proposed FIP measures. The SIP approvals are discussed above in Section I.B.1.c.

EPA's public hearing on these two FIP actions will be held in Diamond Bar, California on June 14, 1995. In order to be

considered, public comments must be submitted orally at the public hearing or in writing to EPA on or before July 14, 1995. Commenters may provide testimony only on the interim final FIP rules identified above. Depending upon the number of requests to testify, the hearing officer may impose a time limit of 5 to 10 minutes per commenter. Commenters are urged to bring a copy (multiple copies, if possible) of their full testimony for the hearing officer. Commenters wishing to testify should write or call EPA Region IX at the address and phone numbers shown in the Addresses portion of this document. The reader may find additional information on the public hearing at the beginning of the Supplemental Information section.

All other portions of today's final California FIP and SIP actions do not significantly differ from the proposal or are a logical outgrowth of it. These portions are issued as final actions and are therefore not subject to further public comment.

II. SIP Actions.

A. Introduction.

1. EPA policy on SIP approval and SIP completeness.

A primary State and local responsibility under the Clean Air Act is to adopt comprehensive air quality plans to attain the NAAQS by the applicable deadline. While EPA was preparing the present California FIPs under court orders, the 1990 Amendments to the Act placed an independent obligation on the responsible California agencies to prepare ozone attainment plans. State

ozone plans were required in two stages: (1) rate-of-progress plans due November 15, 1993, to achieve a minimum of 15 percent of creditable emission reductions of VOC during the 6 years following enactment, and (2) complete ozone attainment plans (including additional rate-of-progress elements) due November 15, 1994. In addition, the amended Act required a CO attainment plan for the South Coast by November 15, 1992.

Following local and State adoption, the Act provides that attainment plans and other required provisions must be submitted to EPA for approval or disapproval. The Act requires EPA to determine whether a required plan has been submitted and whether it is complete. EPA is allowed 60 days to make a finding of completeness; a submittal is automatically deemed complete within 6 months if EPA has not by then found it incomplete.

A finding by EPA that a State has failed to make a submission or that the submitted plan is incomplete starts an 18-month sanctions clock under section 179 that can only be stopped by EPA's finding that the State has submitted a complete plan.¹¹

¹¹Section 179 of the Act establishes two principal sanctions: an increased offset requirement for major new or modified sources and a highway funding restriction. The offset sanction requires that major new or modified sources in the area obtain at least 2 to 1 offsets before construction. The highway funding sanction is enforced through an EPA prohibition on approval by the U.S. Secretary of Transportation of projects or grants in the area except where the Secretary has determined that the purpose of the project or grant is to improve a demonstrated safety problem. Section 179(b)(1)(B) also allows the Secretary to exempt certain projects and grants that are intended to minimize air pollution problems.

Section 179(a) requires EPA to impose one of these sanctions within 18 months and the second sanction within 24 months if: (1) the state has failed to submit a required plan or element; (2) the

If EPA has not approved a SIP within 2 years, EPA must promulgate a FIP to fill the gap.

A finding of completeness means that a submittal may be eligible to be considered for approval. It does not mean that the submittal is necessarily approvable, but only that the proposed SIP meets minimum criteria for rulemaking consideration. For further details on EPA's initial completeness criteria, the reader should consult appendix V to 40 CFR 51.

The Act allows EPA 12 months to approve or disapprove a plan that has been determined to be complete. This is done through formal rulemaking procedures consistent with the Administrative Procedure Act (or "APA," 5 U.S.C. Section 551 et seq.): publication in the FEDERAL REGISTER of a proposal, followed by an opportunity for public comment on the proposed action, and final promulgation in the FEDERAL REGISTER. Once they are deemed complete, ozone SIPs submitted for the California FIP areas must be acted upon through this formal rulemaking.

If a SIP submission is approved, it becomes part of the SIP for the area and becomes federally enforceable. In the case of these California FIPs, future EPA approval of replacement SIPs

required submission is deemed incomplete; (3) EPA disapproves the required submission; or (4) an approved SIP is not being implemented. Section 110(m) allows EPA to impose these sanctions at any time after EPA has made one of these findings.

EPA has determined that the offset sanction will be imposed first, followed by the highway sanction, unless in a particular case EPA finds that the alternative order better complies with the purposes of the Act. See 59 FR 39832 (August 4, 1994) for EPA's final action on the sequencing of the sanctions and the regulations for implementation of the sanctions (40 CFR 52.31).

would also allow simultaneous rulemaking to rescind all or portions of the Federal plans promulgated today.

If a required submission is disapproved, mandatory sanctions apply as above, and EPA must promulgate and implement a FIP to fill the gaps or correct the deficiencies in the SIP until the State submits and EPA approves an adequate replacement SIP. In the event that EPA must find incomplete or disapprove the ozone SIPs for Sacramento, Ventura, and the South Coast, sanctions will be implemented on the schedule mandated in the Act, and any additional ozone SIP requirements of the 1990 Amendments that have not been fulfilled through these FIPs will be promulgated within two years of EPA's incompleteness finding or disapproval.

EPA takes final action in Section II.F of this document to disapprove the South Coast CO SIP because the State has not yet submitted regulations for the enhanced I/M program, which is the central feature of the attainment demonstration. This disapproval starts the sanctions clock, but no additional FIP action is required in this case, since EPA today is promulgating an enhanced I/M program that fills the only gap in the CO attainment SIP.

For EPA's detailed interpretations of the Act's requirements with respect to ozone and CO SIPs, the reader should consult the "General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990" (April 16, 1992, 57 FR 13498), guidance documents referenced in the General Preamble, and supplements to the General Preamble published subsequently.

2. EPA policy on FIP replacement by SIP approval

As emphasized throughout EPA's court pleadings, FIP meetings and workshops, the proposed FIP notice, and in this final FIP notice, EPA firmly believes that Congress intended that State and local agencies should have primary responsibility for air quality planning, decisionmaking, and leadership in their areas. Strong State and local plans have a far greater potential than these FIPs to achieve rapid air quality progress consonant with other State and local goals. EPA's aim in the California FIP effort has been to accelerate the development of fully approvable SIPs that could replace the FIPs in their entirety. We believe that our position is shared by CARB and by the great majority of commenters on the FIPs.

Therefore, while EPA has no choice but to issue the FIPs at this time prior to action on the ozone SIP submittals, EPA will take every step to expedite action to approve the SIPs and remove the FIPs.

EPA's obligation under the FIP court orders is to issue complete attainment demonstrations for each FIP area, including all rules required to achieve the reductions needed for expeditious attainment (see discussion in Section III.A.1). EPA approval of a SIP for one of the FIP areas that fully met this requirement would allow complete rescission of the FIP for that area. This is true even if the attainment SIP did not meet other statutory requirements, such as the section 182(d)(1)(A) provision for TCMs to offset VMT. Any such ozone plan

deficiencies would be the subject of separate FIP promulgations, according to the schedule set forth in the Act.

Before EPA is able to approve a SIP submittal as fulfilling the overarching requirements for ozone progress and attainment, it is likely that individual SIP rules may be submitted and approved, and comparable FIP measures removed. For this to happen, the SIP rule would generally be a fully adopted and enforceable regulation, or a regulatory equivalent, rather than merely a commitment to develop and adopt a SIP rule in the future. In order to avoid changing compliance requirements while a SIP substitute is being adopted and submitted, EPA may postpone compliance dates to allow time for the State to adopt and submit enforceable rules, and EPA to approve the rules. Such postponement must not interfere with progress and attainment.

FIP measures may be adjusted or rescinded altogether upon approval of SIP measures so long as such substitution would not "interfere with any applicable requirement concerning attainment and reasonable further progress...or any other applicable requirement of this Act" (section 110(1) of the Act). This can be done by the State demonstrating, for each submittal, that the new SIP rule or combination of rules will achieve emission reductions that are comparable to the FIP provisions. The SIP substitutes need not be identical rules or even address the same control category; the critical test is whether the substitution of the SIP measures for the FIP measures would interfere with attainment, progress, or other requirements of the Act.

It is not necessary for the SIP measure to be fully approved in order for EPA to remove or suspend FIP measures. Although a rule may not fulfill all of the applicable CAA requirements, EPA may grant a limited approval based on the measure's value in strengthening the SIP, making the rule (and its emissions reductions) an enforceable part of the SIP. In such cases, EPA would generally complete the rulemaking action by issuing a limited disapproval, based on the failure of the SIP to address specific requirements of the Act (for example, fall short of addressing a particular RACT provision). As a result, the State is under an obligation to amend the rule to make it fully approvable, but the rule remains as a federally enforceable part of the SIP even if a correction is never made.

Section 110(k)(4) of the Act allows EPA to conditionally approve a flawed SIP measure based on the State's commitment to fix the flaws, and thus grant the State an additional year to correct a flawed rule. During the period of the condition, the measure is a federally enforceable part of the SIP. If EPA finds that the State fails to correct the deficiency within the year allowed, the conditional approval automatically converts into a disapproval and the affected rule disappears from the SIP.

Until the condition is satisfied, it is not appropriate for EPA to remove a comparable FIP measure, but EPA is considering the possibility of conditionally suspending the FIP rule during the one year period before the SIP condition expires. Under a conditional FIP suspension, at the expiration of the SIP

condition EPA would either: (1) fully approve the corrected SIP rule and delete the comparable FIP rule, or (2) terminate the suspension of the FIP rule and recommence enforcement of it.

In order to facilitate EPA's replacement of the FIP with SIP measures, the State should identify which FIP measures it wishes to be replaced by the new SIP measures, and should include with the SIP submittal a technical support document demonstrating that replacement of specific FIP measures with SIP measures will meet the test of section 110(1) of the Act.

3. EPA rulemaking to expedite SIP replacement of the FIP

Public comments on the proposed FIPs emphasized the importance of rapid action on the part of CARB, local agencies, and EPA to ensure that the FIPs are supplanted as soon as possible by approvable SIPs that can achieve clean air in ways that are more responsive to local circumstances and concerns. Commenters stressing this theme included U.S. Representatives and Senators, California State legislators, the Governor of California, local elected officials, the Chairwoman of CARB, and members of the business and environmental communities.

EPA will continue to assist CARB and the responsible local agencies in the development and adoption of fully approvable SIPs that may substitute for the FIPs. EPA is also committed to using every available approach to speed the review and formal rulemaking process required before EPA can approve SIP submittals and rescind the FIPs.

These expedited rulemakings must be consistent with the APA

and its protections of the public's rights and opportunities to participate in the Federal government's decisionmaking. EPA has carefully reviewed its options for streamlining formal rulemaking actions on the SIPs. The various options EPA employs in this rulemaking action and expects to use in the future are discussed in Section III.A.7., along with a brief explanation of EPA's authorities and rationale for each type of rulemaking.

B. State SIP Submittals.

1. Inspection and Maintenance (I/M).

Under the Act, enhanced I/M programs were to have been submitted by all States on November 15, 1992. However, due to delays in federal rulemaking, the EPA accepted committal SIPs on that date instead. California made that commitment in November 1992. After a lawsuit challenging the committal SIP policy on I/M, EPA was directed to require implementing regulations within one year of the committal date, to approve or disapprove all I/M submittals received to date and to impose sanctions within 18 months of disapproval or deficiency findings.

California received a deficiency finding on its enhanced I/M submittal in December 1993, due to lack of final implementing regulations. This deficiency must be corrected by June 1995, at the very latest, to avoid mandatory sanctions. The Bureau of Automotive Repair (BAR) is responsible for developing and adopting regulations to satisfy all I/M requirements. Work on development of the final program and final regulations is

underway.

In March 1994, the California Environmental Protection Agency (Cal/EPA) entered into a Memorandum of Agreement (MOA) with EPA. The MOA sets conditions for implementing the enhanced I/M program, executing a pilot demonstration study, and applying study results by December 31, 1994. Also in March 1994 Governor Wilson signed a package of three I/M bills to bring California's smog check program into compliance with EPA requirements. The final legislative package creates a hybrid system of test-only and test-and-repair stations in certain State nonattainment areas. The program is designed to achieve vehicle emissions reductions that meet federal performance standards.

The California enhanced Smog Check program is a fundamental component of the attainment strategies in the California ozone nonattainment areas required to implement enhanced I/M. In accordance with the suit described above however, EPA can only approve adopted regulations as I/M SIP submittals. Unfortunately, therefore, the Agency is not approving the I/M SIP commitment and must finalize its proposal for a federally-administered enhanced I/M program. As described in more detail in section III.D.1.e., EPA intends that the SIP efforts will overtake EPA's I/M effort before implementation and will replace it.

2. Mobile sources and fuels

California can boast of a long and distinguished history of mobile source control. The State developed emissions regulations

for cars before the Clean Air Act existed. It began regulation of nonroad engines several years before the EPA undertook regulation in this sector. For this reason and because of the severe air quality problems found in the State, the Clean Air Act accords California special authority, denied every other State, to develop its own regulations for all on-highway motor vehicles and many types of nonroad equipment. California's SIP included many provisions for control of these sources which emit the majority of the ozone precursor pollution in the FIP areas.

a. Adopted regulations.

CARB's existing control program for mobile sources includes the Low Emission Vehicle program, reformulated gasoline and diesel fuel rules, emissions standards for diesel farm and construction equipment over 175 horsepower, a Phase 2 on-board diagnostic system requirement, revised emissions standards for medium-duty and light heavy-duty vehicles, and requirements for utility engines and off-highway recreational vehicles and engines. Together, CARB estimates that even accounting for growth, between 1990 and 2010 these programs will reduce mobile source emissions of HC by almost two-thirds, and NOx by approximately one-third.

EPA has included each of these important programs in the FIP attainment demonstrations. Although the engine and vehicle programs were not submitted as part of the SIP, they were submitted to EPA as part of waiver requests under Section 209 of the Act. Many of these programs have already received waivers

from EPA. Only the three nonroad rules are still awaiting waiver approval. It appears that the grounds for waiver approval are met by the submissions and that the waivers will be granted. If the waivers are denied for any reason, EPA commits to developing programs to achieve the necessary emission reductions. Under the waiver, any significant reduction in benefits would be compared to the existing Federal standard for similar engines. The benefits achieved are therefore enforceable and credited in this FIP.

In EPA's FIP proposal California's reformulated diesel fuel and gasoline programs were continued without amendment and were fully credited. No negative comments were received regarding the CARB programs. Since the proposal, CARB has submitted these programs to EPA as part of the November 1994 SIP revision. Approval of these programs as part of the SIP has the same effect as the original proposal on all regulated and otherwise affected parties. Therefore, EPA is today approving the submitted fuels programs into the SIP without further opportunity for public comment.

As CARB notes however, more mobile source reductions are still necessary in order to achieve attainment in all three areas.

b. Commitments. In light of the shortfall between the currently adopted rules and the amount of reductions needed from all sources, CARB committed itself and other entities to significant further rulemakings. Some of these commitments

include dates by which they will occur; some are less precise. CARB commits to adopt several very important regulations before 1997. These near-term commitments are for adoption of an accelerated ULEV requirement for medium-duty vehicles, tighter NOx standards for California heavy-duty gasoline and diesel trucks, and tighter HC and NOx standards for California industrial equipment. CARB also committed itself and the Air Quality Management Districts to developing and implementing incentive programs to get old cars and trucks off the road and to encourage the purchase of very clean equipment before it would otherwise be required.

In a notice in the proposals section of today's Federal Register, EPA is proposing to approve CARB's near-term commitments to develop emission standards. As CARB notes, these commitments build on technology that is or will be available by the scheduled implementation dates. Further these commitments are important to developing an attainment demonstration.

EPA is not proposing to approve CARB's commitments to adopt incentive programs at this time because many important details have not been worked out, including which agencies will implement the incentives, and how the incentives will be financed. Incentives to develop and use new-technology can be very effective at bringing low emissions equipment to market early, and EPA will work with CARB and any other responsible entities to develop these incentive programs.

3. Consumer Products and Antiperspirants and Deodorants..

a. Summary of Action

In today's document EPA is taking final action on the consumer product rules submitted by CARB on November 15, 1994. As described in 59 FR 23318, EPA had proposed measures to reduce VOC emissions from consumer products (40 CFR 52.2957(a)) and antiperspirants and deodorants (40 CFR 52.2957(b)). However, on November 15, 1994 EPA received from CARB a formal submittal of the California Consumer Products and Antiperspirant and Deodorant rules as part of the Consumer Products Element of the 1994 California SIP.

Because the proposed FIP measure is virtually identical to the CARB submittal, EPA is not finalizing its FIP proposal but invoking the "good cause" provision in the APA to approve, in final action, the CARB Consumer Products and Antiperspirant and Deodorant rules without further opportunity for comment. Further comment is unnecessary under section 553(b)(1)(B) of the APA, since EPA cannot envision any comment on the CARB measure which could not have been made with respect to EPA's FIP proposal. It is therefore unnecessary to solicit additional comment on the CARB submittal, especially since EPA's role with respect to the SIP approval is narrower than for FIP promulgation. EPA has considered the comments on the FIP proposal in application to the CARB SIP submittal and has found that submittal to be approvable.

The FIP proposal generated several comments. EPA believes that very similar or identical comments would have been received if EPA had proposed a Notice of Proposed Rulemaking to approve

the CARB submittal as a SIP revision. EPA believes that the appropriate issues for comment on the SIP rule are whether it is enforceable and how much credit is deserved. Since the proposed FIP rule was based on the CARB rule, and the FIP proposal was enforceable and claimed the same amount of credit as the SIP rule, these issues have already been addressed. Therefore, further public comment regarding today's action of replacing the proposed FIP rules with nearly indistinguishable State rules is unnecessary and not in the public interest.

b. Summary of major comments and responses.

EPA received several comments on the proposed FIP consumer products rule. EPA is not promulgating its proposed consumer products FIP measure. Therefore, EPA has analyzed the comments with the SIP rule in mind to see whether they present any persuasive reasons for EPA not to approve the SIP rule. The comments and EPA's response are summarized in the following paragraphs.

Several commenters expressed a preference for CARB administration of the consumer products and antiperspirant/deodorant rules. Although CARB always would have maintained primary responsibility for administering the rule regardless of the FIPs, EPA concurs and through this approval action reaffirms CARB's primary administrative role.

Several commenters stated their opposition to perceived technology forcing limits adopted by CARB and proposed in the FIPs. EPA believes that CARB's approach of adopting future

effective limits is appropriate given the need to reduce VOC emissions in California's ozone nonattainment areas. In addition, the rule allows time for manufacturers to make the necessary adjustments to meet the requirements of the rule. CARB's inclusion of flexibility in their rules (i.e., the Innovative Products provision and Alternative Compliance Plan¹² provision) also affords manufacturers compliance options if they are unable to reformulate a given product. In the event that a future effective limit is revised by CARB, EPA will work with CARB to help develop an alternative strategy for achieving the needed reductions.

Several commenters requested that EPA change the proposal so that the VOC standards apply to products only at the time of manufacture, instead of at the time of manufacture or sale. They also opposed the eighteen month "sell-through" provision. EPA believes that applying the standards at the time of sale is an appropriate requirement because many consumer product manufacturers are located outside of California. Compliance checks at the point of sale are vital in determining the effectiveness of the standards. The sell-through provision is necessary to avoid the continued sale of noncompliant products, which can occur where the seller has extremely slow turnover or where a business deliberately stockpiles noncompliant products.

¹² Although CARB did not submit the Alternative Compliance Plan (ACP) regulation to EPA as part of their November 15th submittal, CARB indicated their intent to submit it to EPA in early 1995. EPA intends to act on the ACP regulation as soon as it is received.

Several commenters recommended changing the consumer products and antiperspirant and deodorant rules to allow automatic acceptance by EPA of innovative product exemptions, alternative test methods, and variances approved by CARB. In order to make the innovative product and variance provisions federally enforceable, EPA worked closely with the State to add the "Federal Enforceability" language to the rule. EPA will expedite review of actions covered under these provisions.

One commenter suggested that EPA add a variance procedure to the FIP proposal or extend the compliance date for aerosol fabric protectants to January 1, 1997. EPA believes that the future effective VOC content limit originally established by CARB is technically sound. The commenter has the option of seeking a variance as provided in CARB's rule.

One commenter indicated that EPA's FIP activity should not subvert its efforts under 183 (e) of the Act. The commenter also stated that EPA should only do what is necessary to meet the statutory requirements for the FIP. In order to meet its statutory requirement for the FIP, EPA believes that an appropriate next step is to approve the CARB consumer products submittal. EPA believes that its action in approving the SIP submittal is consistent with section 183(e), which does not prohibit states from adopting consumer product measures nor does it prohibit EPA from acting on such submittals.

A commenter noted that in the proposed FIP measure if a product label indicates that the product is suitable for use in

more than one consumer product category, the applicable VOC content limit will be the lowest of the categories for which suitability is claimed. The commenter cites the example in products that are labeled as antiperspirant/deodorant, which would be subject to the more restrictive high volatility organic compound (HVOC) limit for deodorants. This provision, which is also in the CARB rules, is important to ensure that manufacturers will make multiple claims just to allow for a higher limit. EPA believes that the "Most Restrictive Limit" provision is justified in order to prevent labeling abuses.

One commenter indicated that the definition of VOC is not clear with respect to the handling of negligibly photochemically reactive compounds and asked for clarification regarding whether pre-market clearance was needed from EPA. EPA believes that the handling of negligibly photochemically reactive compounds in the submitted SIP rule is consistent with the proposed FIP measure. EPA believes the handling of these compounds in the SIP rule is adequate but could be further clarified. EPA will work with CARB to this end during its next rule revision. EPA did not intend that the FIP language be interpreted as requiring a pre-market clearance but rather that, for compliance purposes, manufacturers may be required to demonstrate to regulators the amount of negligibly reactive compounds claimed to be in a given product.

A commenter suggested that EPA should consider removing the VOC content standard for the dual purpose Air Freshener/Disinfectant product category. EPA believes that

removing this standard would not be prudent, and that CARB was technically justified in creating this content standard. In addition, because this is a SIP action, it is not appropriate for EPA to modify CARB's rule.

A commenter recommended that EPA set aside the CAA section 182(e)(5) commitment to reduce VOC emissions from consumer products by 80 percent (of 2003 emissions) as of January 1, 2009. On November 15, 1994, CARB adopted and submitted to EPA a 1994 SIP with additional consumer product measures, including three section 182(e)(5) measures which, in combination with CARB's previously adopted and proposed mid-term measures, will achieve an 85 percent reduction in 1990 South Coast consumer product emissions by the year 2010. EPA elsewhere is taking an interim final approval action on the CARB consumer product new-technology measure (see section II.E.4.), thus allowing deletion of EPA's comparable section 182(e)(5) measure.

A commenting organization noted its concern that the FIP has a disproportionate impact on aerosols because CFCs and HCFCs cannot legally be used as propellants and HFCs are not a viable option for use in consumer products because of US Department of Transportation regulations and limited availability of the product. The commenter recommended that EPA maintain the February 1995 HVOC limits in place beyond 1999. EPA supports the future effective VOC content limits originally established by CARB. In this instance, alternative product forms are readily available.

A commenter requested the removal of the "grandfather clause" for companies using ethanol prior to January 1, 1994, and that the antiperspirant and deodorant MVOC standards should be modified. These modifications would allow fair competition among firms. EPA and CARB are aware that the grandfather clause may affect some manufacturers more than others. CARB has acknowledged that the ethanol issue will be reexamined in the near future. EPA believes that this issue can best be addressed by the affected parties working with CARB to develop suggested changes which will accomplish or enhance the same overall reduction goals. CARB's expected reexamination does not affect EPA's SIP approval at this time.

A commenter stated that the antiperspirant and deodorant limits in the FIP are not technologically feasible or realistic and amount to a ban on the aerosol form of these products. As mentioned previously, EPA supports the future effective limits originally established by CARB. In this instance, alternative product forms are readily available.

c. Future Rulemaking

EPA will be following future changes made by CARB to their Consumer Products and Antiperspirant and Deodorant regulations, and as those changes are submitted to EPA for review and approval into the SIP, EPA will take actions on the submittals as appropriate.

4. Pesticides.

The proposed FIP pesticides measure (40 CFR 52.2960) was

designed to reduce VOC emissions from agricultural and commercial structural pesticide application. On November 15, 1994, CARB and the California Department of Pesticide Regulation (DPR) submitted a SIP measure committing to reduce emissions from the same source categories.

The SIP measure summarizes California's ongoing program to collect VOC-content data, and outlines how the State will use the data to establish a 1990 emissions baseline. The measure briefly describes an education program that DPR will implement to reduce emissions by up to 20 percent in ozone nonattainment areas which take credit for pesticide reductions in the SIPs. This currently includes Sacramento, South Coast, Ventura, Mojave and San Joaquin. DPR has committed to evaluate progress towards the reduction targets in these areas starting in 1996 and, if voluntary reductions are inadequate, to adopt and implement regulatory measures by 1997. The SIP summarizes major features of these regulatory measures, but does not contain actual regulations.

While the SIP measure represents progress towards reducing VOC emissions from pesticides, it does not contain adopted regulations which will achieve adequate emission reductions on an acceptable schedule. EPA is, therefore, finalizing the FIP rule at 40 CFR 52.2960 to assure sufficient and timely emission reductions from this category. EPA will continue to encourage and support State rule development and adoption, in order to ensure that the FIP rule is replaced by SIP approval before the

FIP rule is scheduled for implementation.

This does not mean that the SIP and FIP must be identical. The SIP discussion of future regulatory elements, for example, differs significantly from the FIP. While many of the SIP elements are not appropriate for the federal measure, the State may well be able to incorporate them into an effective and enforceable State program while still achieving equivalent emission reductions.

C. Sacramento ozone SIP submittal.

CARB adopted and submitted to EPA the 1994 California SIP for Ozone on November 15, 1994. As discussed earlier, CARB's plan includes commitments to adopt statewide regulations for mobile sources and for area sources such as consumer products and pesticides. Because the emissions from mobile and area sources are a dominant part of the inventory for the Sacramento area, it is critical that the State adopt regulations outlined in their SIP submittal.

Although the statewide measures are projected to achieve a significant amount of the emissions reductions necessary towards ozone attainment in the Sacramento area, attainment is not possible without the adoption and submittal of local air agency regulations as well. Commitments to adopt these regulations are included in the Sacramento Area Regional Ozone Attainment Plan which was adopted by the local air agencies in the Sacramento area. These agencies include the Sacramento Metropolitan Air Quality Management District (SMAQMD), the Yolo-Solano Air

Pollution Control District (YSAPCD), the El Dorado County Air Pollution Control District (EDCAPCD), the Placer County Air Pollution Control District (PCAPCD) and the Feather-River Air Quality Management District (FRAQMD). The most current Regional Plan was submitted to EPA on December 29, 1994. The Regional Plan along with CARB's 1994 California SIP for Ozone make up the Sacramento ozone attainment plan.

The State and regional plans include current and future emission inventories and an attainment demonstration based on photochemical modeling intended to fulfill section 182(c)(2)(A) of the Clean Air Act. It also describes existing and planned State and local control measures intended to fulfill Clean Air Act requirements for contingency measures and post-1996 rate-of-progress, as well as various requirements of the California Clean Air Act. Finally, as discussed further below, the plan is based on a bump-up of the Sacramento area to a "Severe" ozone classification and an attainment date of 2005.¹³

1. Baseline and projected emissions.

The Sacramento ozone attainment plan contains estimates of 1990 emissions from all VOC and NOx sources in the Sacramento nonattainment area. It also provides projections of future emissions through 2005 which account for existing emission controls and anticipated changes in population, industry activity and land use. Finally, the plan describes several control

¹³ For more details, see CARB's 1994 SIP for Ozone Attainment (adopted and submitted to EPA on November 15, 1994) and the Sacramento Area Regional Ozone Attainment Plan.

scenarios and their effects on the projected future emissions. A summary of both the base year and the uncontrolled attainment year inventories is provided in the table below labeled, "Sacramento SIP Inventories."

Baseline Sacramento SIP Inventories

(tons per summer day)

	1990 VOC	2005 VOC	1990 NOx	2005 NOx
Total Stationary	88	106	12	15
Solvents/Coatings	48.7	62.3		
Petroleum	10.4	9.8		
Industrial Process	3.6	4.8		
Pesticides	9.7	11.3		
Livestock Waste	8.0	8.0		
Ag Burning	2.9	3.6		
Landfills	1.3	1.6		
Bakeries	1.5	1.7		
Other	2.1	3.5		
Total Mobile On-road	110	40	118	83
Automobiles	70.6	23.4	48.8	23.9
Lt/Med Duty Trucks	29.0	9.9	23.5	18.3
HD Gas Trucks	4.6	1.8	9.8	29.6
HD Diesel Trucks	4.7	4.3	34.5	9.7
Motorcycles	.9	.8	.2	1.0
Urban Diesel Buses	.1	.1	.7	.4
Total Mobile Off-Road VOC	24	25		
Recreational Boats	12.4	16.8		
Locomotives	.4	.4		
Aircraft	1.3	1.4		
Equip (construction, industry & farm)	3.4	4.0		
Utility Lawn & Garden	5.1	1.8		
Other	1.7	2.2		
Total Mobile Off-Road NOx			34	37
Industrial Equipment			6.9	8.2
Non-Farm Equipment			6.9	7.5
Farm Equipment			5.5	6.2
Mobile Equipment			.8	.8
Locomotives			10.1	9.6
Aircraft			1.7	2.0
Recreational Vehicles			2.3	3.2
Lawn & Garden Equip			.1	.3
Total Emissions	222	173	164	135

2. Control Measures.

(a) Stationary sources.

CARB's 1994 California SIP for Ozone includes statewide control measures for consumer products, aerosol paints and pesticides. These measures account for a significant portion of projected emissions reductions for the Sacramento area and are discussed in greater detail above in Sections II.B.3. and II.B.4. of this preamble.

The Sacramento local air agencies have regulatory authority over most stationary source VOC and NOx emissions. Some of the VOC rules recently adopted by several of the local agencies include adhesives, auto refinishing, bakeries, fugitives, graphic arts, metal parts and products, polyester resin operations and surface prep and clean-up. For NOx, several of the local agencies have recently adopted rules for biomass boilers, gas turbines and internal combustion (IC) engines. These rules have been or will be submitted to EPA for inclusion in the Sacramento SIP.

The Sacramento Regional Plan also describes local plans for future rulemaking which include several of the categories mentioned above for those air agencies which have not yet adopted rules. The plan also includes future rules for pleasure craft coatings, pleasure craft refueling, semiconductor manufacturing, wood products coatings and residential water heaters.

b. Mobile sources.

Sacramento's mobile source measures are largely based on the

statewide mobile source element. The adopted standards include the statewide LEV program, reformulated fuels, and three different sets of nonroad standards. In its mobile source element, CARB also included commitments to adopt and implement several regulations on a schedule sufficient to achieve the emission reductions required for progress and attainment.

While the State has responsibility for the majority of the mobile source measures in the Sacramento attainment plan, SMAQMD has committed to adopt several measures. The Employee Commute Options Program they are developing is discussed below under Section II.C.3. Two other mobile source measures are aimed at heavy-duty truck fleets and heavy-duty mobile equipment fleets. The heavy-duty program requires fleets to purchase clean trucks when replacing old trucks and to retrofit or sell pre-1981 trucks. The equipment program will reduce emissions from nonroad equipment by encouraging use and purchase of new cleaner engines and retrofit of in use engines with control technology to meet lower standards. SMAQMD predicts that when implemented these two programs will achieve a 5 tpd reduction in NOx emission by 2005. These programs are scheduled for adoption in December of 1995 and as such cannot be credited in Sacramento's attainment demonstration at this time.

3. Bump-up.

Pursuant to section 181(b)(3) of the CAA, the State of California has requested a bump-up of the Sacramento nonattainment area to a "Severe" ozone classification with an

attainment date of 2005. The Sacramento ozone attainment plan is based on a 2005 attainment date. EPA is granting the State's bump-up request in a separate Federal Register notice.

4. Modeling and attainment demonstration.

Since the time of the FIP proposal, CARB has made extensive revisions to the Urban Airshed Model (UAM) inputs for the July 11-13, 1990 ozone episode. This has resulted in estimates for the amount of emission reductions required for ozone attainment that are different from those used in the FIP proposal. For the Sacramento ozone attainment plan, California's revised modeling indicated reduction requirements of 39 percent VOC and 40 percent NOx from the 1990 baseyear inventories are needed to demonstrate attainment.

D. Ventura ozone SIP submittal. On November 8, 1994, the Ventura County Air Pollution Control Board adopted Ventura County's 1994 Air Quality Management Plan (AQMP). The AQMP describes the district's strategy to attain the federal ozone standard and includes current and future emission inventories. It also describes Ventura's rulemaking plans for stationary sources over which the District has primary authority.

On November 15, 1994, CARB adopted the 1994 California SIP for Ozone. The SIP builds upon Ventura's AQMP and outlines California's mobile source, consumer product, and pesticide strategies for which the State has primary responsibility. With technical support in the AQMP, the SIP also provides an attainment demonstration based on photochemical modeling that is

intended to fulfill section 182(c)(2)(A) of the Clean Air Act.

1. Baseline and projected emissions.

The SIP estimates 1990 emissions of VOC and NOx in Ventura and projects future emissions through 2005, the relevant Clean Air Act attainment deadline. These projections account for existing emission controls as well as anticipated changes in population, industry activity and land use. The SIP also describes several control scenarios and their effects on projected future emissions. A summary of both the base year and the uncontrolled attainment year inventories is provided in the table labeled, "Baseline Ventura SIP Inventories."¹⁴

Baseline Ventura SIP Inventories

(tons per summer day)

Category	VOC	VOC	NOx	NOx
	1990	2005	1990	2005
Stationary	45.8	41.2	17.8	9.8
Mobile	41.5	16.2	63.4	51.5
Totals	87.4	57.9	81.3	61.4

The 1994 SIP incorporates a number of inventory and modeling improvements that diverge from previous efforts. For example,

¹⁴ "Ventura County 1994 Air Quality Management Plan," Ventura County Air Pollution Control District (VCAPCD), November 8, 1994, tables 9-3 and 9-4 1990 uncontrolled columns, and Appendix E-94, tables E-27 and E-28 2005 uncontrolled columns, as modified by VCAPCD on 10/12/94.

the FIP proposal estimated 1990 stationary source emissions at 54.2 tpd VOC and 22.8 tpd NOx, compared to the 1994 SIP estimates of 45.8 and 17.8. Major differences between the 1991 and 1994 AQMP baseline inventories include: use of EMFAC7F, the State's model for estimating on-road mobile source emissions; addition of tank degassing, charbroiling and other new emission factors; revisions to the outer continental shelf and boating emission factors, and estimation of pesticide emissions using the Department of Pesticide Regulation's pesticide use reporting system.

2. Control Measures.

a. Stationary sources.

The Ventura AQMP describes 21 stationary source measures that have been adopted since 1991. Among the more significant are those for internal combustion engines, wood product coatings, adhesives, electric power generating equipment, and boilers, steam generators and process heaters.

The AQMP also includes 15 stationary source measures scheduled for future adoption, 7 further study measures, and 3 contingency measures. Most of these measures are described in Appendix H to the AQMP, and they include controls for glycol dehydrators, clean-up solvents, vehicle gasoline dispensing, and gas turbines. For the majority of these measures, adequate implementing authority exists and responsibility for adoption and implementation is assigned, emission reductions are identified, and adoption and initial implementation dates are specified. The

Ventura County Air Pollution Control Board committed to these adoption and implementation schedules when it approved the AQMP on November 8, 1994.

Included in the AQMP are SIP measures analogous to each of the stationary and area source FIP measures proposed for implementation in Ventura. EPA expects to be able to approve these SIP measures before the FIP measures are scheduled for implementation. These specific SIP rules are generally identified in the discussions of the analogous FIP measures found in section III.C of this notice.

b. Mobile sources.

In the submitted SIP, Ventura's mobile source measures are based on the statewide emissions standards for mobile sources. The adopted standards include the statewide LEV program, reformulated fuels, and three groups of nonroad equipment standards. The State plan also includes discussions of long range control measures under the State's jurisdiction, and commitments to adopt and implement the measures on a schedule sufficient to achieve the emission reductions required for progress and attainment in conjunction with measures assigned by the State to the Federal government.

One mobile source is extremely important to highlight. The ships that transit the Ventura coast without using the port or oil rigs there contribute well over ten percent of Ventura's NOx emissions. After control strategies are in place on other sources they will contribute more than 20 percent. CARB and the

Ventura AQMD both believe that moving these ships south of the Channel Islands while transiting the basin was necessary to achieve attainment of the health-based air quality standards. CARB states in Volume IV of the SIP "movement of the shipping channel...produces large NOx emission reductions that cannot be easily replaced. Therefore, it appears that maintaining the attainment demonstration will require this control to be retained..." Interested readers should read section III.D.5. of this document for more information regarding EPA's efforts in the FIP attainment demonstrations.

3. Modeling and attainment demonstration. The November 1994 SIP submittal incorporates extensive revisions to the Urban Airshed Model (UAM) inputs for Ventura. Major revisions reflect improved understanding of relevant mixing heights and vehicle emissions. The allocation of vertical layers in the model was changed from four layers below and two above the mixing height to three layers above and below the mixing height to better replicate vertical resolution above the mixing layer.

As a result of these and other changes, the emission inventories and reduction targets used in the SIP differ significantly from those used in the FIP proposal and previous AQMPs. Specifically, the 1994 SIP estimates 1990 emissions at 87 tpd VOC and 81 tpd NOx. Ventura performed an array of UAM runs on this base year inventory to establish base year model performance. Ventura then performed additional runs to project future year emissions and predict attainment year ambient ozone

concentrations under various control strategy scenarios. The set of control measures selected for the SIP attainment demonstration is designed to reduce 1990 emissions by 48 percent for VOC and 50 percent for NOx. This equates to across-the-board carrying capacity emission targets of 45 tpd VOC and 40 tpd NOx.

While the modeling incorporated in the SIP reflects the best information available, it contains some shortcomings. Model performance has not yet met EPA's goals set forth in the modeling guidelines with respect to unpaired peak estimation for one of the episode days (September 17) and the gross error, while meeting EPA's goal, is high.¹⁵ Many of these outstanding performance issues can be attributed to a confluence of modeling complexities caused by Ventura's sea-land interface, complex terrain, and presence of transported ozone and chemical species conducive to ozone formation. Model performance may also be jeopardized by uncertainty in the estimated biogenic emissions.

An additional modeling limitation is that, like the FIP proposal and previous AQMP efforts, the 1994 SIP attainment demonstration is based on predicted daily maximum ozone concentrations at any monitoring station. Ozone concentrations above the ozone NAAQS are, however, predicted for a sparsely populated thirty-six mile area located approximately three miles east of Cassitas Pass. EPA's modeling guidelines indicate that, "there should be no predicted daily maximum ozone concentrations

¹⁵ The Guideline for Regulatory Application of the Urban Airshed Model, EPA-450/4-91-013, July 1991.

greater than 0.12 ppm anywhere in the modeling domain..."¹⁶

Model evaluation work underway at CARB may resolve the modeling uncertainty and indicate domainwide attainment. EPA will evaluate the persistence of ozone exceedances after model improvement to determine if the basin is in attainment.

E. South Coast Ozone SIP Submittal

On September 9, 1994, the SCAQMD adopted a 1994 AQMP. This plan revises and updates previous AQMPs addressing applicable requirements of State and Federal law for each of the ambient air quality standards. With respect to federally-required plans, the AQMP includes: (1) a new attainment demonstration for the 1992 nitrogen dioxide (NO₂) SIP; (2) a comprehensive update to the 1992 CO SIP (see discussion below in section II.F.); (3) a PM-10 attainment analysis and Best Available Control Measures (BACM) SIP; (4) a revised 1993 ozone rate-of-progress SIP; and (5) a 1994 Ozone SIP, addressing post-1996 rate-of-progress and attainment. On December 3, 1994, the SCAQMD adopted further revisions to the 1993 ozone rate-of-progress plan for the period 1990-1996.

The CARB amended and approved the portions of the AQMP relating to ozone attainment, ozone rate-of-progress, and PM-10 BACM on November 15, 1994, and submitted these and other elements of the AQMP as SIP revisions on the following dates:

- Ozone attainment plan - November 15, 1994;
- Ozone 15 percent rate-of-progress plan (December 9, 1994

¹⁶ Ibid., page 63.

SCAQMD revision) - December 29, 1994;

- CO SIP (1994 SCAQMD revision) - December 28, 1994;
- PM-10 BACM SIP - November 15, 1994;
- NO2 SIP (revised emissions inventory and emissions budgets for purposes of conformity) - October 14, 1994.

With respect to ozone, the AQMP provides separate attainment demonstrations and rate-of-progress plans for the three geographic areas for which the SCAQMD is responsible. In addition to the South Coast Air Basin, which is classified "Extreme," the SCAQMD also has jurisdiction over two separate portions of the Southeast Desert Nonattainment Area for Ozone: Antelope Valley in the desert portions of Los Angeles County, and Coachella-San Jacinto Planning Area in the desert portions of Riverside County. The Southeast Desert Nonattainment Area for Ozone is classified "Severe-17," and has an ozone attainment deadline of 2007. On November 15, 1994, CARB amended, adopted, and submitted as a SIP revision these "Severe" area attainment demonstrations and a request for waiver from the post-1996 rate-of-progress requirement. On December 29, 1994, CARB submitted revised 1990-1996 rate of progress plans for the Antelope Valley and Coachella-San Jacinto areas. EPA will act upon these various SIP submittals in separate rulemaking.

1. Baseline and projected emissions.

The CARB SIP and South Coast AQMP contain estimates of the 1990 baseline and 2010 attainment year emissions for VOC and NOx sources in the South Coast Air Basin. The projected 2010

emissions account for existing emission controls and projected changes in population, industry activity, and land use. The SIP and AQMP describe the overall control strategy and its effect on the projected intermediate and attainment year emissions. A summary of base year and attainment year inventories for the South Coast Air Basin is provided in table below titled, "Baseline South Coast SIP Inventories." These data are based on information provided in the California SIP and South Coast AQMP.¹⁷ The mobile source inventory estimates in the SIP are based on modifications to the inventory produced by EMFAC7F, the State's model for estimating on-road mobile source emissions.

Baseline South Coast SIP Inventories

(tons per summer day)

Category	VOC 1990	VOC 2010	NOx 1990	NOx 2010
Stationary	666	727	235	106
Mobile	858	327	1132	826
Totals	1524	1054	1367	932

The SIP VOC stationary source inventory estimates differ from those used by EPA in the FIP proposal. The SIP estimates

¹⁷ "South Coast 1994 Air Quality Management Plan, Appendix III-B, Current and Future Planning Emissions in the South Coast Air Basin," South Coast Air Quality Management District, September, 1994.

reflect up-to-date information which was not available at the time of EPA's FIP proposal.¹⁸ The SIP 1990 stationary source VOC inventory estimate is significantly less (i.e., 666 tpd vs. 904 tpd) than the previous estimate used in the FIP proposal. The primary difference is reflected in the revised estimate of the "Other Surface Coating" category, which accounts for the majority of industrial coating activity in the Basin. The revised and lower 1990 estimate in the SIP is based largely on a revised estimate of diurnal effect assumptions. The 2010 stationary source estimates in the SIP are slightly higher than those in the proposed FIP. The higher estimate results from revised growth assumptions, banked emission reductions credits, and an adjustment to reflect increased VOC usage from substitutes for ozone depleting compounds. A summary of the stationary source categories is provided below in the table titled, "Summary of South Coast VOC Stationary Source Inventory." A more detailed breakdown of the inventory is found in the docket.

Summary of South Coast VOC Stationary Source Inventory

(tons per summer day)

Stationary Sources: VOC	1990	2010
Fuel Combustion	16.7	21.9

¹⁸ In the proposed FIP, EPA had used the 1990 stationary source inventory estimates in the SCAQMD's "Final Federal Reactive Organic Compounds Rate-of-Progress Plan for the South Coast Air Basin, November, 1993."

Waste Burning	1.1	1.4
Architectural Coatings	67.2	83.0
Consumer Products	107.9	109.2
Surface Coating	148.5	166.3
Other Solvent Use	81.4	123.0
Petroleum Process, Storage & Transfer	113.8	103.2
Industrial Processes	51.0	50.6
Miscellaneous Processes	76.7	57.5
Emission Reduction Credits	-	10.8
Totals	666	727

The SIP estimates also reflect up-to-date NOx information which was not available at the time of EPA's FIP proposal. 1990 and 2010 stationary source NOx estimates in the SIP are similar to those in the proposed FIP. Differences in the 2010 stationary source estimates can be attributed to reductions expected from SCAQMD's adoption of its NOx Regional Clean Air Incentives Market (RECLAIM) program; these reductions have now been incorporated by the SCAQMD into the 2010 SIP inventory. A summary of NOx emissions from the stationary source categories is provided in the table titled, "Summary of South Coast NOx Stationary Source Inventory." For purposes of the table and to avoid the

appearance of double counting, emissions included in the SCAQMD's RECLAIM program are listed separately. A more detailed breakdown of the NOx inventory is found in the docket.

Summary of South Coast NOx Stationary Source Inventory

(tons per summer day)

Stationary Sources: NOx	1990	2010
Fuel Combustion	125.6	64.2
Waste Burning	1.8	2.0
Solvent Use	0.6	0.9
Petroleum Process, Storage & Transfer	1.4	2.1
Industrial Processes	1.7	2.6
Miscellaneous Processes	2.2	3.2
Emission Reduction Credits	-	3.0
RECLAIM	102.0	28.2
Totals	235.2	106.2

2. Modeling and attainment demonstrations.

The attainment demonstration was based on an application of the Urban Airshed Model, the EPA preferred model for photochemical modeling applications, to the South Coast Air Basin. Five episodes, representing different meteorological regimes, were modeled to determine the efficacy of the control

strategy under various meteorological conditions. Three episodes were selected from the time period of the 1987 Southern California Air Quality Study to complement the 1985 episode which was used for the 1989 AQMP, and represented the highest peak measured ozone concentration (.36 ppm). One additional episode was selected (September 1987).

The model performance for each of the five episodes is extensively discussed in the Final Technical Report V-5. The UAM demonstrated attainment of the NAAQS for each of the five episodes in the year 2010.

3. Control measures.

The AQMP includes 61 stationary source, 16 on-road, 10 off-road, 11 transportation control and indirect source, 2 advanced transportation technology, 4 further study, and 11 contingency measures. Most of the measures are described extensively in appendices to the AQMP (e.g., Appendix IV-A Stationary Source Control Measures, Appendix IV-B District's Mobile Source Control Measures, Appendix IV-C Transportation Control and Indirect Source Measure Recommendations, Appendix IV-H Contingency Measures).

For the majority of the control measures, adequate implementing authority exists and responsibility for adoption and implementation is assigned, emission reductions are identified, and an adoption and an initial implementation date is specified. The SCAQMD Governing Board included in its resolution of adoption the following finding:

That the District is committed to develop the proposed control measures and contingency measures in the Plan (for which the District has authority) into regulatory form within one year after federal approval of the Plan, or by the dates specified in the Plan, whichever comes first. (1994 AQMP Board Resolution 94-36, Finding 32, page 11.)

Included among the SCAQMD's proposed controls are measures for each of the FIP's stationary and area source measures applicable in the South Coast. These potential replacements for particular FIP rules are identified in the discussions of the associated FIP rules.

The CARB supplemented the ozone portions of the plan with discussions of long range control measures under the State's jurisdiction, and commitments to adopt and implement the measures on a schedule sufficient to achieve the emission reductions required for progress and attainment in conjunction with measures assigned by the State to the Federal government.

In EPA's FIP/SIP proposal, EPA proposed to conditionally approve commitments by the SCAQMD to adopt specific measures included in the 15 percent rate-of-progress plan submitted on November 15, 1993. EPA is not finalizing the proposed conditional approval, since more recent SIP submittals significantly revise both the measures and the adoption dates. In separate rulemaking, EPA will act on the new 15 percent rate-of-progress plan and the 1994 Ozone SIP.

4. Section 182(e)(5) provisions.

The 1990 Amendments to the Act added section 182(e)(5), which applies exclusively to "Extreme" ozone areas. This

provision authorizes the State to use conceptual, as yet unadopted measures for its ozone attainment demonstration and rate-of-progress after the year 2000, if these measures anticipate new or improved technology or control techniques and are not needed to meet the progress requirements for the first 10 years.

The AQMP generally discusses control areas and approaches that are appropriate for long-range development and adoption in accordance with section 182(e)(5). To illustrate the SCAQMD's commitment in this area, the AQMP also includes a summary of a broad range of clean technology development projects sponsored by the SCAQMD's Technology Advancement Office (TAO) (Appendix IV-G) and lists of TAO current or recently-completed projects for mobile sources (Executive Summary, Table 7-5) and stationary sources (Executive Summary, Table 7-6).

As required by the Act, the SCAQMD's 1994 AQMP Board Resolution 94-36, includes the following finding:

That the District is committed to develop contingency measures for the Section 182(e)(5) long-term measures and submit them to the U.S. Environmental Protection Agency no later than three years before implementation of the Section 182(e)(5) measures. Finding 33, page 11.

CARB also submitted a commitment to develop the required contingency measures for implementation in the event that the State or South Coast new-technology measures are unsuccessful (1994 California SIP for Ozone, Volume I, page I-34).

To qualify for the section 182(e)(5) authorization, the State submitted a demonstration that reductions from both the

CARB and SCAQMD new-technology measures are not needed to achieve the first 10 years of progress required under the Act.

EPA interprets the Act to allow EPA to approve the State's new-technology measures and credit them toward the FIP's attainment demonstration, even before EPA determines that the South Coast ozone SIP attainment demonstration is fully approvable. Assuming the State makes the required commitment to submit contingency measures and the Administrator concludes that the measures are not needed to achieve the first 10 years of progress, the provisions of section 182(e)(5) authorize the Administrator to approve and credit the State's conceptual measures at this time.

These measures necessarily are preliminary, and as such lack both regulations and technical support or even decisions regarding specific directions and approaches. Complete SIP rule elements are dependent upon future years of research projects, analyses of technologies and associated commercial feasibility, public workshops, and public decisionmaking. Eventually, the measures must become federally enforceable regulations, and in that process undergo full public involvement both at the State and local level and through formal EPA SIP approval action.

CARB and SCAQMD have undertaken the new-technology measure obligations to achieve, in conjunction with other elements of the SIP submittal, ozone attainment in the South Coast by the year 2010. These initiatives rest upon past accomplishments and extensive present investments of both CARB and SCAQMD in

developing new clean technologies through the commercialization and regulatory stages.

EPA in this notice takes interim final action to approve the SCAQMD and CARB new-technology provisions listed below, and to make appropriate amendments to the proposed FIP's new-technology provisions. EPA believes that it would not be in the public interest to issue without amendment the proposed FIP's new-technology provisions. Because of the court-ordered deadline for FIP issuance, EPA finds that good cause exists to revise the proposed FIP's new-technology measures and approve the State's measures at this time, deferring further notice and comment until after promulgation. These opportunities for public involvement after the proposal are discussed at the beginning of this document. As discussed above, further and more extensive opportunities will arise as the CARB and SCAQMD new-technology measures are developed and adopted in regulatory form, and again as EPA takes SIP rulemaking action on the submitted regulations. The reader may refer to Section III.A.7. for a discussion of interim final rulemaking.

SCAQMD New-Technology Measures

Advance Tech-CTS (Coating Technologies), ADV-CTS-01,
adoption 2003, 23.9 tpd ROG¹⁹;

Advanced Tech-Fugitives, ADV-FUG, adoption 2003, 23.1 tpd
ROG;

¹⁹ROG (reactive organic gases) is used by California in lieu of EPA's VOC. Unlike VOC, ROG includes ethane.

Advance Tech-Process Related Emissions, ADV-PRC, adoption 2003, 12.3 tpd ROG;

Advance Tech-Unspecified, Stationary Sources, ADV-UNSP, adoption 2003, 67 tpd ROG;

Advance Tech-CTS (Coatings Technologies), ADV-CTS-02, 54.7 tpd ROG.

CARB New-Technology Measures

Improved Control Technology for LDVs, M-2, adoption 2000, implementation 2004-5, 2010 emission reductions - 10 tpd ROB, 15 tpd NOx;

Off-road diesel equipment - 2.5 g/bhp-hr NOx standard, M-9, adoption 2001, implementation 2005, 2010 emission reductions - 7 tpd ROG, 30 tpd NOx;

Consumer products advanced technology and market incentives measures, CP-3/4/5, adoption December 2001/2003/2005, implementation January 2002-2010, 2010 emission reductions 46 tpd ROG;

Additional measures, 2010 emission reductions 50 tpd ROG, 22 tpd NOx. The measures include possible market-incentive measures and possible operational measures applicable to heavy-duty vehicles.

F. Final Action on South Coast Carbon Monoxide (CO) SIP Submittal

In the California FIP proposal, EPA proposed partial approval and partial disapproval of the South Coast 1992 CO SIP. This plan was submitted on December 31, 1992, and amended on April 29, 1993. The South Coast plan addressed the "Serious"

area CO requirements of the 1990 Amendments to the Act.

In this document, EPA is taking final partial approval and partial disapproval action on the South Coast CO SIP, as amended by the SCAQMD on September 9, 1994, and further amended by the State on December 29, 1994.

EPA is approving the amended CO SIP with respect to the CAA requirements for notice and adoption, baseline and projected emissions inventory, oxygenated fuels, clean-fuel vehicle fleet program, employee commute options program, and VMT forecasts. EPA is disapproving the plan with respect to the requirements for reasonably available control measures, attainment demonstration, quantitative milestones and reasonable further progress, VMT contingency measures, and TCMs to offset growth in VMT.

As discussed below, all of these deficiencies derive from the State's failure, at this time, to submit regulations for an enhanced I/M program, since progress and attainment depend, to a large extent, on this program.

After EPA's proposal, the State Legislature adopted enabling legislation for an enhanced I/M program, and the State is in the process now of drafting regulations for the program. However, as discussed in Section II.B.1., the State has not yet adopted and submitted enhanced I/M regulations, which are the centerpiece of the attainment demonstration. For this reason, EPA must disapprove those portions of the South Coast CO SIP listed above. Upon approval of enhanced I/M regulations achieving the emissions reductions relied on in the attainment demonstration, EPA will

convert the partial disapproval of the CO SIP to an approval.

As noted above, EPA is acting at this time on a 1994 technical update to the original 1992 CO SIP. On September 9, 1994, the SCAQMD adopted a 1994 AQMP, including the updated CO plan. The portions of the AQMP relating to CO were further amended by CARB and submitted to EPA by the State on December 28, 1994. This 1994 CO SIP submittal provides, among other things, a revised CO attainment demonstration based on updated VMT projections (reflecting new forecasts prepared by the Southern California Association of Governments), revised motor vehicle emissions modeling (employing EMFAC7F rather than EMFAC7EP), new emissions inventories, amended lists of control measures and contingency measures, and revised areawide (UAM) and hotspot (CAL3QHC) air quality modeling analyses using the updated inventories and improvements to other modeling inputs.

Since the 1994 CO SIP submittal revises and corrects the 1992 CO SIP submittal, EPA in this document acts upon the current CO plan rather than the original 1992 SIP submittal. This is consistent with the wishes of CARB and SCAQMD and the position set forth in EPA's proposed action: to take final action on the updates and corrections to the original plan contents. EPA's CO FIP, discussed in Section III.B.6. below, builds on the technical foundations of the 1994 CO SIP.

1. Statutory provisions and General Preamble requirements.

Air quality planning requirements for CO nonattainment areas appear in sections 186-187 of the Act. EPA's "General Preamble"

sets out EPA's preliminary views on how EPA intends to act on CO SIPs (see generally 57 FR 12498 (April 16, 1992) and 57 FR 18070 (April 28, 1992)). The proposal summarizes each of the statutory requirements and EPA's preliminary interpretations of the Act's provisions (59 FR 23282-5). These interpretations continue to apply and the reader should consult the "General Preamble" for further details on EPA's policies relating to CO plan approval.

2. Procedural requirements.

Both the SCAQMD and CARB have satisfied applicable statutory and regulatory requirements for reasonable public notice and hearing prior to adoption of the plan and each of the plan amendments. The SCAQMD conducted over 25 public workshops and five public hearings prior to the 1994 AQMP adoption hearing on September 9, 1994. The 1994 AQMP was unanimously adopted by the Governing Board of the SCAQMD (Resolution No. 94-36). The SIP submittal included proof of publication for notices of public hearings.

3. Baseline and projected emissions inventory.

The revised and updated emissions inventories included in the 1994 CO SIP conform to EPA's guidance documents, which are cited in the FIP proposal. EPA approves the CO plan with respect to the emissions inventory requirements of the Act. EPA has used these inventories for purposes of the final CO FIP.

As noted above, the motor vehicle emissions factors used in the plan were generated by the CARB EMFAC7F and BURDEN7F program, which EPA accepts for use in California SIPs in lieu of EPA's

Mobile emission factors. The gridded CO inventory for motor vehicles was then produced using Caltrans Direct Travel Impact Model (DTIM) to combine EMFAC7F data with transportation modeling performed by SCAG.

CARB is in the process of revising the EMFAC program further. These changes may substantially increase CO emissions in the baseline 1990 and 2000 inventories, and SCAQMD has committed to make any necessary amendments to the AQMP at the earliest possible date following release of the new EMFAC factors (Resolution 94-36, page 11, #30-31).

Several commenters on the SIP and FIP urged use of corrected emission factors as soon as they are available. EPA encourages CARB and SCAQMD to amend the AQMP based on the more accurate emissions data and to submit a revised, fully approvable SIP attainment demonstration.

4. Reasonably available control measures (RACM).

EPA proposed to disapprove the CO SIP with respect to the RACM requirement because the plan did not include an enhanced I/M program in fully adopted form. EPA listed the CO control measures in the 1992 plan and concluded that the plan would reflect RACM if an adopted enhanced I/M program were included. EPA invited comment on whether other RACM exist for the South Coast CO plan. No comments were received on the plan's satisfaction of the RACM provision of the Act.

The 1994 plan has a revised list of CO control measures (Appendix I-E, Table 3-1). The current list includes the

following measures (with adoption/implementation dates):

- ISR-01, Special Event Centers (1995/1997-2010);
- ISR-02, Shopping Centers (1996/1997-2010);
- ISR-04, Airport Ground Support Access (1997/1999-2010);
- ISR-05, Trip Reduction at Schools (1995/19997-2010);
- ISR-06, Enhanced Rule 1501 (1996/1997-2010);
- ISR-07, Parking Cash-Out (1995/1997-2010).

The plan also includes contingency measures (Tables 3-3, 3-4, and 3-5), which are discussed below.

In this action, EPA disapproves the plan with respect to RACM, based on the lack of an adopted, enforceable enhanced I/M program. EPA is not making a determination as to whether the remainder of the SIP meets RACM at this time. In order for EPA to approve the South Coast CO SIP with respect to RACM, the State must: (1) submit approvable enhanced I/M regulations and (2) ensure that the plan includes all measures that are reasonably available. For a more complete discussion of EPA's interpretation of the RACM provisions and appropriate SIP consideration of the reasonable availability of TCMs, the reader may refer to the General Preamble (April 16, 1992, 57 FR 13560-13561).

5. Attainment demonstration.

As discussed in the FIP proposal and in Section III.B.6. below, the SCAQMD attainment demonstration included both an areawide and a "hot-spot" modeling analysis at four heavily traveled intersections.

The areawide analysis was conducted using the Urban Airshed Model, according to the "Guidance for Application of Urban Areawide Models for CO Attainment Demonstration". The projected peak 8-hour carbon monoxide concentration for projected year 2000 emissions with proposed controls (4405 tpd) was 9.0 ppm. The maximum projected 8-hour average at an intersection (the Lynwood site) was 8.1 ppm.

The "hot-spot" analysis was performed for four intersections (Lynwood, Hollywood, Westwood and Inglewood), using CAL3QHC and base case as well as worst case meteorological data. Projected peak "hot-spot" concentrations under base case meteorology were 1.1 ppm at Lynwood and Inglewood and 1.7 ppm in Westwood and Hollywood.

The combined areawide analysis and "hot-spot" analysis concentration demonstrate compliance with the 8-hour carbon monoxide standard at the Westwood, Hollywood and Inglewood intersections. The Lynwood regional and peak "hot-spot" concentrations individually comply with the 8-hour carbon monoxide standard. The concentrations were not aggregated, based on the conclusions of a 1991 study of the carbon monoxide in the Lynwood area. This study determined that the projected maximum "hot-spot" concentrations were at a different time of day from the maximum areawide peak concentration.

The modeling follows applicable EPA guidelines and demonstrates attainment of the 8-hour CO standard for the year 2000 with the proposed control measures. However, because the

enhanced I/M regulations have not been adopted and the attainment demonstration depends heavily on emission reductions from the program, the plan does not demonstrate attainment with adopted measures and the plan must be disapproved with respect to the attainment demonstration requirement of section 187(a)(7) of the Act.

6. Quantitative milestones and reasonable further progress (RFP).

EPA proposed to disapprove the 1992 South Coast CO SIP submittal with respect to the milestone and RFP requirement because the plan depended heavily upon reductions from the as yet unadopted enhanced I/M program for progress leading to attainment. The 1994 revision also relies heavily on implementation of an enhanced I/M program in order to achieve scheduled progress and eventual attainment by the year 2000 deadline in the Act. In this action, EPA disapproves the South Coast CO SIP with respect to the RFP requirement in section 171(1) and the specific annual emission reduction requirement in section 187(a)(7) of the Act. Again, EPA approval of enhanced I/M regulations would cure this defect and allow for approval of the milestone and RFP provision.

7. Mandatory measures.

The Act requires that plans for "Serious" CO areas include four control programs, which are addressed below.

(a) Enhanced I/M.

As discussed previously, the State has not yet submitted in

adopted from the enhanced I/M program upon which the South Coast CO plan relies heavily in order to demonstrate timely attainment. Therefore, EPA takes no action today with respect to the specific requirement for enhanced I/M under section 187(a)(6) of the Act.

(b) Oxygenated fuels.

As proposed, EPA concludes that the California Wintertime Oxygenates Program and California Phase 2 Reformulated Gasoline regulation (see Section II.B.2.) satisfy at this time the requirements of sections 211(m) and 187(b)(3) respecting wintertime oxygen content of gasoline. Therefore, EPA approves the South Coast CO SIP with respect to oxygenated fuels.

(c) Clean-fuel vehicle fleet program.

On November 13, 1992, CARB submitted a request to EPA to opt-out of the Federal clean-fuel vehicle fleet program based upon a demonstration that the California Low-Emission Vehicle (LEV) program qualifies as a substitute for the section 246 program. On November 29, 1993 (58 FR 62532), EPA conditionally approved CARB's opt-out request, based on the State's commitment to formally adopt and submit as a SIP revision the opt-out demonstration.

On November 7, 1994, CARB submitted Executive Order G-125-145 as a SIP revision, formally adopting the findings associated with the opt-out request, and attaching supporting materials demonstrating that the LEV program meets the requirements for opting out of the clean-fuel vehicle fleet program. In this document, EPA takes direct final action to approve the SIP

submittal respecting the substitute program and to rescind the condition on approval of the opt-out request. Therefore, California now meets the clean-fuel fleet program requirement, and EPA takes final action to approve the South Coast CO SIP with respect to this provision and remove the condition on the approval.

Elsewhere in this FEDERAL REGISTER, EPA is proposing approval of, and soliciting public comment on, the California SIP revision relating to the clean-fuel vehicle fleet program. If an adverse comment is received on this approval by [Insert 30 days from publication in the Federal Register], EPA will then treat this direct final rule as a proposed rule. Comments received will be addressed in a separate final rulemaking. Unless this approval is commented upon, no further rulemaking will occur on this SIP revision, as the direct final rule will stay in place.

(d) Employee Commute Options program.

Section 187(b)(2) of the CAA requires a SIP submission by November 15, 1992, of an Employee Commute Options (ECO) regulation to reduce commute trips to the worksites of large employers. Section 182(d)(1)(B) mandates that the ECO SIP requirement also applies to "Severe" and "Extreme" ozone nonattainment areas. Consequently, because the South Coast is both a "Serious" CO nonattainment area and an "Extreme" ozone nonattainment area, CARB must submit an ECO regulation to satisfy both requirements. Section 182(d)(1)(B) establishes minimum ECO program performance levels: the trip reduction regulation must

"require that each employer of 100 or more persons in such area increase average passenger occupancy per vehicle in commuting trips between home and the workplace during peak travel periods by not less than 25 percent above the average vehicle occupancy for all such trips in the area at the time the revision is submitted." In December 1992, EPA issued the Employee Commute Options Guidance to assist states in developing ECO program regulations.

Regulation XV-Rule 1501 (hereinafter referred to as Rule 1501) was first adopted by the SCAQMD on December 11, 1987, as the country's first large-scale ECO program. Since that date, Rule 1501 has undergone several significant revisions to streamline the program and address implementation issues. CARB first submitted Rule 1501 as a SIP revision on February 7, 1989, and submitted an amended Rule 1501 on March 31, 1991 and again on May 31, 1993. EPA reviewed the 1993 amendment to Rule 1501 for consistency with the CAA and EPA's ECO Guidance. This review is available as a Technical Support Document, "EPA Analysis of the Approvability of South Coast Air Quality Management District Regulation XV-Rule 1501, November 15, 1993." Based on this review, EPA proposed to approve the May 31, 1993 version of Rule 1501 as meeting the requirements of Sections 187(b)(2) and 182(d)(1)(B) of the CAA.

SCAQMD made several administrative changes to Rule 1501 in board-adopted amendments dated June 11, 1993, October 8, 1993, and March 11, 1994. On October 19, 1994, CARB submitted these

amendments. EPA has reviewed the 1994 SIP submittal for consistency with the CAA and EPA's ECO Guidance. EPA's review is available as a Technical Support Document, "EPA Analysis of the Approvability of South Coast Air Quality Management District Regulation XV-Rule 1501, January 15, 1995." The 1994 SIP changes are not substantive and change neither the stringency of the rule nor EPA's ability to approve Rule 1501 as proposed.

Consequently, based on this detailed review, EPA makes a final approval of the 1994 version of Rule 1501 as meeting the requirements of sections 187(b)(2) and 182(d)(1)(B) of the CAA.

8. Vehicle miles traveled (VMT) forecast and contingency measures.

(a) VMT forecast.

Section 187(a)(2)(A) of the CAA requires the South Coast CO plan to contain a forecast of vehicle miles traveled (VMT) for each year until attainment of the CO NAAQS. Also, as required by section 187(a)(2)(A), the CO plan must provide for annual updates of the forecasts along with annual reports to be submitted regarding the extent to which the preceding annual forecasts proved to be accurate. These annual reports must contain estimates of actual VMT in each year for which the forecast was required.

The 1994 revision to the 1992 South Coast CO Plan provides revised VMT forecasts. These VMT forecasts have been updated by using improved transportation modeling and incorporating more recent socioeconomic data compared with the VMT forecasts

contained in the original 1992 CO Plan. EPA approves these new VMT forecasts as meeting the section 187(a)(2)(A) requirement. The required VMT forecasts are included in Table 2-2 and Appendix A of the revised plan (Appendix I-E to the 1994 Air Quality Management Plan, "Revision to the 1992 Carbon Monoxide Attainment Plan"). Also, EPA approves the responsible agencies' commitments to revise and replace the VMT projections as needed and monitor actual VMT levels in the future.

(b) VMT contingency measures.

Section 187(a)(3) requires that the CO plan contain specific contingency measures to be implemented if the annual estimate of actual VMT or a subsequent VMT forecast exceeds the most recent prior forecast of VMT or if the area fails to attain the CO NAAQS by December 31, 2000. These contingency measures must be fully adopted and be fully approvable and enforceable and must take effect without further action by either the State, or the EPA Administrator.

To meet the section 187(a)(3) requirement for contingency measures, the State submitted the following four fully adopted contingency measures:

- Rule 1501-Work Trip Reduction Plans;
 - Rule 1610-Old Vehicle Scrapping;
 - Rule 1183-Outer Continental Shelf Air Regulation; and,
 - Rule 1504-Cash-out Program for Non-Owned Employer Parking.
- SCAQMD designated these rules as CO plan contingency measures in June 1994, and CARB submitted them to EPA on July 8, 1994, to

address this outstanding SIP requirement. As described above, Rule 1501 was previously adopted, amended, and submitted to EPA on several occasions, most recently to meet the ECO requirements of the CAA. Rule 1610 was adopted on January 8, 1993, and submitted on May 13, 1993; an amendment was adopted on February 11, 1994 and submitted on July 8, 1994. Rule 1183 was adopted on March 12, 1993 and incorporates by reference portions of 40 CFR Part 55. Finally, Rule 1504 was adopted on May 13, 1994, and submitted on July 8, 1994.

The four rules achieve reductions not relied upon in the CO SIP's demonstration of progress and attainment. However, the measures cannot now be considered surplus, since the attainment demonstration is incomplete, pending submittal and approval of enhanced I/M regulations. Therefore, the measures do not qualify at this time for approval as meeting the contingency requirement, and for this reason EPA is taking final action to disapprove the SIP with respect to the section 187(a)(3) contingency measure requirement.

In an effort to clarify and facilitate future State actions that could allow for ultimate full approval of the CO SIP, EPA has evaluated the four SCAQMD measures and concluded that the section 187(a)(3) VMT contingency measure requirement would be satisfied if and when EPA approves enhanced I/M regulations and the CO attainment demonstration. EPA's conclusion is based on the following review.

Rules 1501, 1183, and 1610 are intended to be surplus,

rather than contingent, control measures. The three SCAQMD rules will have been implemented prior to any contingent triggering event such as a determination that VMT levels have been exceeded or that the plan has failed to achieve progress milestones or attainment by December 31, 2000. Although these measures are not designed to be implemented when triggered by excess VMT levels or by a failure to achieve scheduled progress or attainment, the SCAQMD rules do meet the requirement that they are implemented without further action by either the State or the Administrator.

Unlike the other three control measures, Rule 1504 is contingent. SCAQMD's implementation of Rule 1504 will be triggered by a failure of the South Coast either to achieve progress milestones such as the VMT forecasts, or to attain the CO NAAQS by December 31, 2000. This implementation will take effect without further action by either the State or by the EPA Administrator.

The remaining CAA requirements are as follows: (1) the individual rules must be fully approvable and enforceable through the SIP; and (2) the rules, when fully implemented, must be adequate to offset the CO emissions equivalent to one year's growth in vehicle miles traveled (VMT).

Of the four contingency measures submitted, Rule 1501, Rule 1504, and Rule 1183 are fully approvable and can be enforced through the SIP. Detailed reviews are available for Rules 1501 and 1504 in companion Technical Support Documents. As described in section II.F.7.d., EPA is taking final action to approve Rule

1501.

Here, EPA takes direct final action to approve Rule 1504. Elsewhere in this document, EPA is proposing approval of, and soliciting public comment on, this direct final action approving Rule 1504. If an adverse comment is received on this approval [insert 30 days from date of publication in the Federal Register], EPA will then use this rulemaking as a proposed rule. Comments received will be addressed in a separate final rulemaking. If EPA does not receive timely adverse comment, the approval will be final with no further rulemaking.

No review is available for Rule 1183 because it simply incorporates by reference existing Federal regulations. EPA will act on Rule 1610 in separate rulemaking.

The contingency measures must produce emission reductions sufficient to offset CO emissions attributable to one year's growth in VMT. The CO emission reductions from Rule 1501 and 1504 (158 tpd) alone are sufficient to offset the CO emissions equivalent to one year's growth in VMT (57 tpd).

As described above, however, lacking the emissions reductions from an approvable enhanced I/M program, the emission reductions from the VMT contingency measures are not surplus and cannot be applied to meet the section 187(a)(3) requirement. As a result, the CO SIP must be disapproved with respect to the requirement for VMT contingency measures pending EPA approval of an enhanced I/M program. This action would allow EPA to change the disapproval of this portion of the CO SIP to an approval.

9. Transportation control measures (TCMs) to offset growth in emissions from growth in vehicle miles traveled (VMT).

Section 187(b)(2) of the Act requires "Serious" CO areas to meet a TCM requirement specified in section 182(d)(1)(A) for "Severe" and "Extreme" ozone areas. To satisfy Section 187(b)(2), EPA interprets the Act to specify two basic and separable requirements (see, e.g., EPA's discussion of the separability of the elements of ozone VMT SIPs required under section 182(d)(1)(A), 59 FR 54866-54869, (November 2, 1994)). First, all such plans must include specific and enforceable TCMs to offset any growth in emissions from growth in VMT and vehicle trips; and, second, the plan must achieve reductions in mobile source CO emissions as necessary, in conjunction with other measures, to comply with the periodic emissions reduction and attainment requirements of the Act. EPA's interpretation of these requirements appears in the General Preamble, 57 FR 13521-13523 and 13533-13534 (April 16, 1992).

To meet the first requirement, the CO plan must include either specific and enforceable TCMs to offset any growth in emissions due to growth in VMT and numbers of vehicle trips, or demonstrate that there will be no growth in emissions between 1993 and the attainment year (in the case of the South Coast, the year 2000), despite predicted growth in VMT and numbers of vehicle trips. Table 2-3 of the revised CO plan provides an adequate demonstration that CO emissions due to on-road mobile sources are steadily decreasing over this time period.

Therefore, this first requirement is met and EPA approves the CO plan with respect to the section 187(b)(2) requirement for a demonstration that TCMs are not required to offset growth in CO emissions (as described in section 182(d)(1)(A)).

To meet the second requirement, the CO plan must achieve reductions in mobile source CO emissions sufficient, in conjunction with other measures, to comply with the periodic emissions reduction and attainment requirements of the Act. As discussed above, the CO plan's control strategy does not provide control measures sufficient to meet the attainment requirements. Therefore, this second requirement cannot be met, and EPA disapproves the CO plan with respect to the section 187(b)(2) requirement for TCMs as needed to meet progress and attainment requirements (as described in section 182(d)(1)(A)).

Until the attainment deficiencies associated with the lack of an approvable enhanced I/M program are remedied, EPA cannot find that the CO plan need not include additional specific and enforceable TCMs that are sufficient, in conjunction with other measures, to meet the progress and attainment requirements of the CAA. EPA's approval of enhanced I/M rules would allow EPA to change this section 187(b)(2) partial disapproval to a full approval.

10. Fully adopted and enforceable control measures.

EPA proposed to disapprove the 1992 South Coast CO SIP submittal because the attainment demonstration relies heavily on one measure, the enhanced I/M program, that was not yet fully

adopted and enforceable. This deficiency remains, and EPA here takes final action to disapprove the South Coast CO SIP with respect to this requirement.

11. Implications of EPA's final action.

As set forth above, EPA is approving the plan with respect to procedural requirements, baseline and projected emissions inventory, oxygenated fuels, clean-fuel vehicle fleet program, employee commute options program, and VMT forecasts. EPA is disapproving the plan with respect to the requirements for: reasonably available control measures, attainment demonstration, quantitative milestones and reasonable further progress, VMT contingency measures, and TCMs to offset growth in VMT.

EPA finds under section 179(a)(2) of the Act that the required South Coast CO SIP submission is partially approved and partially disapproved. The Act provides that two mandatory sanctions apply following a finding of SIP disapproval (including a finding of partial disapproval), the first to be imposed 18 months after the finding, and the second to apply 6 months later, unless the State corrects the deficiencies before then.

EPA recently established the Agency's selection of sequence of these two sanctions: the offset sanction under section 179(b)(2) shall apply at 18 months, followed 6 months later by the highway sanction under section 179(b)(1). EPA does not choose to deviate from this presumptive sequence in this instance. For more details on the timing and implementation of the sanctions, see 59 FR 39832 (August 4, 1994), promulgating 40

CFR 52.31, "Selection of sequence of mandatory sanctions for findings made pursuant to section 179 of the Clean Air Act."

EPA's transportation conformity rules (40 CFR 51 Subpart T and 40 CFR Part 93) specifically provide for protection when a SIP is disapproved only because committed measures have not yet been submitted in enforceable form, as is the case with the South Coast CO plan. Therefore, transportation plans and Transportation Improvement Plans (TIPs) may continue to be implemented and amended as long as the protective status of the CO SIP is active. This does not address any other reasons why the conformity status of the transportation plans and TIPs might lapse.

III. Summary of Major Comments, EPA Responses, and Changes to Proposed FIPs

A. Issues Relating to EPA's Authorities and Rulemaking Procedures.

1. FIP Obligations and SIP Responsibilities under the 1990 CAAA.

Prior to the enactment of the Clean Air Act Amendments of 1990 (CAAA), EPA entered into agreements settling lawsuits brought by environmental organizations seeking FIPs to attain the ozone NAAQS in Sacramento and Ventura, and the CO and ozone NAAQS in the South Coast. These FIP obligations arose when EPA disapproved SIPs for these areas because they failed to demonstrate attainment of the NAAQS by December 31, 1987, the deadline under the pre-Amended Act.

Following enactment of the 1990 CAAA, in which Congress substantially revised the Part D nonattainment provisions of the Act, EPA sought to vacate these agreements on the basis of the proposition that the new Act's provisions on State air quality plans has superseded the SIP disapprovals on which the Agency's pre-1990 FIP obligations were grounded. In Coalition for Clean Air (reported as Coalition for Clean Air v. Southern California Edison) 971 F. 2d 219 (9th Cir. 1992), cert. denied, 113 S. Ct. 1361 (1993), the 9th Circuit ruled that revised section 110(c) of the Act operated to preserve EPA's pre-existing FIP obligations. The U.S. Supreme Court declined to review the case. In the ensuing settlements and litigation with the plaintiffs in the three areas, the district courts, to which the cases were remanded, entered orders requiring EPA to promulgate final FIPs in February 1995. For a history of the FIP litigation, see the FIP proposal, 59 FR 23263, 23287 - 23288.

The 9th Circuit in Coalition for Clean Air did not decide what, if any, requirements of the new law would apply to FIP obligations arising under the pre-Amended Act. 971 F. 2d at 225. EPA examined this issue and concluded that the provisions of the 1990 Amendments, such as the attainment deadlines and definitions, apply to FIPs arising from the Agency's pre-Amendment disapprovals. After analyzing the new Act's provisions, EPA further concluded that while the FIPs must cure the original failure of the SIPs to demonstrate expeditious attainment, they need not address new requirements of the Act as

to which there has been no delinquency or as to which EPA's FIP obligation has not yet matured. For example, EPA in these FIPs is not legally compelled to meet the new progress requirements in sections 182(b)(1) and 182(c)(2). Moreover, EPA's FIPs need not meet requirements, such as maintenance of the NAAQS, for which the 1990 Amendments establish a whole new legal regime.

A group of environmental organizations disagreed with the above analyses and asserted that EPA, in promulgating a FIP, must meet all the Act's requirements for SIPs. The commenters, however, presented no new legal theories that convince the Agency to modify its original thinking with respect to these issues. For a detailed explanation of EPA's legal analyses, the reader is referred to the FIP proposal. 52 FR 23263, 23288 - 23290.

Notwithstanding EPA's current FIP obligations, the 1990 Amendments independently require States to submit complete attainment plans for CO and ozone by November 15, 1992, and November 15, 1994, respectively. These plans must meet all of the new requirements in the 1990 Amendments. EPA's policies regarding approval of these plans are discussed in Section II.A.1 of this document. EPA's preliminary interpretations of the Act's ozone, CO and generally applicable SIP provisions are set forth in the General Preamble. 57 FR 13498.

2. Relationship between Title II and section 110(c) FIP authorities.

As described in the FIP proposal, in promulgating regulations in a FIP, EPA may rely on its authority under section

110(c) or under authority it has under other provisions of the CAA, such as its authority under various provisions of Title II to regulate certain mobile sources. Furthermore, there are two prongs to EPA's section 110(c) authority. The first is EPA's general FIP authority to act to cure a planning inadequacy in any way clearly not prohibited by statute by promulgating measures that neither EPA nor the State otherwise has explicit power to issue, as long as no provision of the CAA or any other Federal law clearly prohibits such measures. The second is EPA's authority to stand in the shoes of the State and exercise all authority that the State may exercise under the CAA.

As explained in the proposal (59 FR 23407-8), since section 209 of the CAA provides that California is not preempted from adopting and implementing a motor vehicle emissions control program provided its program satisfies the criteria of section 209(b), EPA may, in exercising its section 110(c) authority to "stand in the shoes of the state," adopt a motor vehicle program or supplement California's own motor vehicle program provided that the FIP program would satisfy the criteria of section 209(b) if California itself undertook the program. Analogous reasoning permits EPA to exercise its section 110(c) authority to regulate nonroad sources that California could regulate provided the measures satisfied the criteria of section 209(e).

EPA believes that its authority under Title II and its authority under section 110(c) to take actions that California itself could take interrelate in the following manner. First,

EPA has the authority to promulgate measures in the context of the FIP where authority may be premised either on some provision of Title II or on EPA's section 110(c) authority. EPA's Title II authority is exercised in the context of national rulemakings premised on considerations of the statutory criteria in a national context. Thus, EPA cannot act under Title II in adopting any California-specific measures in the FIP. With respect to such measures, EPA must exercise either its general section 110(c) authority or its FIP authority to stand in California's shoes.

Second, EPA has the authority to promulgate measures for which the Agency has authority under section 110(c), either by virtue of standing in California's shoes or by virtue of its general section 110(c) authority, but for which EPA is not authorized to act under any provision of Title II. In addition, EPA believes that it may promulgate measures under its section 110(c) authority even where EPA is prohibited from exercising Title II authority to take such action. Only if EPA were prohibited by statute from promulgating a measure under section 110(c) itself would EPA not have authority to promulgate it under its section 110(c) authority in the context of a FIP.

This conclusion is consistent with the wide range of authority accorded EPA in acting under section 110(c) and with the purposes of a FIP. Even if EPA could not take an action under Title II (e.g., the promulgation of more stringent NOx standards for heavy-duty vehicles prior to model year 2004), EPA

may take that action in the context of the FIP if California could. To reach the contrary conclusion would be to limit EPA's authority in the FIP to a range less than that available to the State -- a conclusion clearly at odds with the fundamental object and purpose of a FIP and with the case law addressing EPA's authority under section 110(c). EPA believes that the limitations in Title II on its ability to modify certain light-duty and heavy-duty emission standards prior to model year 2004 (see section 202(b)(1)(C)) are limitations only on EPA's ability to modify such standards in Title II rulemakings establishing nationwide mobile source standards. Since California itself could adopt more stringent standards applicable only to vehicles or engines sold in California, EPA does not believe that the provisions of section 202(b)(1)(C) limit EPA's ability to promulgate such standards in the context of a FIP. For these reasons, EPA disagrees with the commenters who contended that EPA could not promulgate such measures in the context of the FIP due to the limitations on EPA's authority contained in Title II.

3. Collection and Disposition of Fees.

In the FIP proposal, EPA set forth its interpretation of the Agency's authority to impose fees in FIPs. See 52 FR 23263, at 23290 - 23291. In short, EPA interpreted the language of the FIP definition in section 302(y) to be sufficiently broad to encompass fees, if imposed for the purpose of providing an

economic incentive.²⁰ EPA further concluded that case law grants FIPs much the same scope as SIPs. See, e.g., Central Arizona Water District v. EPA, 990 F. 2d 1531, at 1541 (9th Cir. 1993). Sections 110(a)(2)(A) and 172(c)(6) specifically authorize SIPs to include fees.²¹

In the FIP proposal, EPA also stated that it must, in general, deposit any fees it collects in the Treasury pursuant to the Miscellaneous Receipts Act, 31 U.S.C. 3302(b). There are limited exceptions to this requirement. See 52 FR 23263, at 23291.

One commenter challenged EPA's interpretation of its authority to impose fees by asserting that section 302(y) is the sole grant of authority delegated to the Agency by Congress and that section expressly excludes the authority to impose fees. EPA disagrees with this analysis of the statute.

The FIP definition clearly authorizes FIPs to include economic incentives and provides examples of some types of such incentives. The use of the words "such as" preceding the examples clearly indicate that they are intended to be illustrative only and not all inclusive. Since fees are specifically listed in sections 110 and 172, there can be no

²⁰Section 302(y) defines the term "Federal implementation plan" as including "enforceable emission limitations or other control measures, means or techniques (including economic incentives, such as marketable permits or auctions of emission allowances)...."

²¹Sections 110(a)(2)(A) and 172(c)(6) require SIPs to include "enforceable emissions limitations, and such other control measures, means or techniques (including economic incentives such as fees, marketable permits, and auctions of emission rights)...."

doubt that Congress intended fees to be a sanctioned method of providing economic incentives. Furthermore, the Supreme Court has long held that regulatory statutes are to be interpreted broadly to further the purposes of the delegation from Congress to an agency. See, e.g., American Trucking Assoc. v. U.S., 344 U.S. 298 (1953).

There is, moreover, nothing in section 302(y) or any other provision of the Act that expressly precludes EPA from imposing fees for the purpose of providing economic incentives. Courts have found that, in exercising its FIP authority under section 110(c) of the Act, EPA may do so in any way not clearly prohibited by an explicit provision of the Act. See South Terminal Corp. v. EPA, 504 F. 2d 646, 669 (1st Cir. 1974) and City of Santa Rosa v. EPA, 534 F. 2d 150, 153 - 154 (9th Cir. 1976). In addition, section 301(a)(1) of the Act contains a broad grant of authority to the Administrator "to prescribe such regulations as are necessary to carry out his functions under [the] Act."

Finally, EPA believes that it would be illogical for a State to be empowered in adopting a plan to impose fees for economic incentive purposes and to deny such authorization to EPA when fulfilling exactly the same purposes. In this connection, the First Circuit has stated that "[t]he statutory scheme would be unworkable were it read as giving to EPA when promulgating an implementation plan for a State, less than those necessary measures allowed by Congress to a State to accomplish Federal

clean air goals." South Terminal Corp. v. EPA, supra at 668.

For the foregoing reasons, EPA believes that the language of section 302(y) is sufficiently broad to encompass fees. Under the circumstances that prevail here, i.e., that the FIP definition is silent as to fees and the statute recognizes the rights of States to impose fees to fill the relevant air quality planning requirements, the interpretation of the agency entrusted to administer a statute is accorded considerable deference by a reviewing court. Chevron v. Natural Resources Defense Council, 467 U.S. 837, 843 - 844 (1984).

Another commenter objected to the proposed ship emission fee program in the FIP. This commenter contended that this measure would conflict with section 110(a)(2)(D)(i) of the Act by causing the diversion of overland discretionary cargo to Seattle/Tacoma. EPA believes this argument is without merit.

Section 110(a)(2)(D)(i) requires SIPs to contain provisions "prohibiting ... any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will ... contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard...." This provision by its terms applies only to sources located within the State. If, in fact, ships divert to Washington to avoid the fee program, a proposition for which there is no discernible evidence, the sources will no longer be located in California and the section will no longer apply. In

addition, it is nonsensical to construe this section of the Act as intending to prohibit regulation based upon the threat of a source to leave the State.

4. Authority to assign SIP credit for FIP measures.

a. Comprehensive FIP Authorities under the CAA.

EPA raised in the FIP proposal the issue of the extent, if any, to which a State may rely in a SIP on emission reductions achieved through measures in a FIP.²² Credit for FIP measures would allow the State to receive full approval for SIPs that rely on such FIP credits for their attainment demonstrations.

Because, as will be seen below, the scope and extent of EPA's legal authorities in promulgating a FIP are relevant to the issue of SIP credit for FIP measures, it is useful to review the three types of such authorities that the Agency articulated in the FIP proposal.

First, EPA may promulgate any measures which it has authority to issue in a non-FIP context, such as emission standards for certain mobile sources under Title II. Second, EPA may invoke its general FIP authority under section 110(c), and act to cure a planning inadequacy in any way not clearly prohibited by statute. Under this general FIP authority, EPA can

²²To the extent that this notice addresses the issue of the appropriate credit to be accorded FIP measures in SIPs, it describes current policy only and does not constitute final Agency action. While the issue is relevant to the eventual replacement of the FIP with a SIP and the approvability of a SIP, it is not inherently part of the FIP itself. EPA will take final action in the context of notice and comment rulemakings related to approval of SIP measures and concomitant rescission of FIP measures.

promulgate measures that neither EPA nor the State otherwise has been explicitly given the power to issue, as long as no provision of the CAA or any other Federal law clearly prohibits such measures. Third, EPA stands in the shoes of the State when promulgating a FIP and therefore may exercise all authority the State may exercise under the CAA. For a more detailed discussion of these types of authorities, see 52 FR 23263, 23290.

b. EPA Legal Interpretation on SIP Credit for FIP Measures.

EPA suggested in the FIP proposal that a straightforward reading of the CAA leads to the conclusion that a State may not rely in a SIP on measures EPA promulgates solely under its general section 110(c) FIP authority, but may rely on measures EPA promulgates under its independent authority, such as Title II. EPA also discussed an argument for establishing a limited exception to this traditional approach for sources that the State is preempted from regulating under Federal law and where the State would have to compensate by imposing unreasonably and inequitably harsher controls on other sources. EPA did not purport to resolve the SIP credit issue in the FIP proposal, but stated that the Agency would continue its analysis and requested comment on the legal and policy implications. See 52 FR 23263, 23270 -23271; 23280-23281.

By letters dated May 4 and August 19, 1994, to Jacqueline E. Schafer, Chairwoman, CARB, Mary D. Nichols, Assistant Administrator for Air and Radiation, elaborated on EPA's preliminary views, as expressed in the FIP proposal, on the

extent to which California may rely in its 1994 ozone SIPs on FIP measures. EPA divided the proposed FIP controls into three groups analogous to those described above: (1) national mobile source measures issued under Title II of the CAA; (2) FIP-area or statewide measures for sources for which State or local authority to set standards is preempted under Federal law; and (3) FIP-area or statewide measures over which the state has full regulatory authority. EPA concluded that the State may only claim credit for Title II national measures.

c. Comments on EPA's Policy on SIP Credit for FIP Measures.

In response to the FIP proposal, EPA received several comments ranging from those supporting the Agency's conclusion that only national measures may be credited, to one commenter advocating that virtually all FIP measures be accorded credit. These comments were essentially general in nature and did not contain detailed legal analyses. Because the discussion below encompasses the issues raised in these comments, we do not address them individually.

EPA also received several comments on the SIP credit issue in response to both the FIP proposal discussion and Ms. Nichols' letters that questioned, as a preliminary matter, the Agency's views on its comprehensive FIP authorities.

The U.S. Department of Defense (DOD), referring to EPA's May 4, 1994 letter, asserted that the overall CAA statutory scheme and Congressional policy support the position that EPA can only legally promulgate measures in a FIP that can be replaced by the

State and local air districts. DOD further contended that EPA has no authority in a FIP to regulate preempted sources; these sources must be regulated only through the statutorily mandated national rulemaking procedures. From its analysis of EPA's appropriate FIP authority, DOD implicitly concluded that SIPs may claim credit for national rules only, and that all other measures in the FIP must necessarily be limited to FIP-area or statewide measures for sources over which the State has full regulatory authority.

EPA believes that DOD's view of EPA's FIP authorities is too restrictive and that EPA, in acting under section 110(c), may exercise its authority in any way not clearly prohibited by an explicit provision of the CAA or any other Federal law.²³ When EPA promulgates FIPs, courts have not required EPA to rely on explicit authority beyond section 110(c) for specific measures: "We are inclined to construe Congress' broad grant of power to the EPA as including all enforcement devices reasonably necessary to the achievement and maintenance of the goals established by the legislation." South Terminal Corp. v. EPA, *supra*, at 669; See also City of Santa Rosa v. EPA, *supra*, at 153-155 (9th Cir. 1976) (upholding the Administrator's authority to promulgate a FIP imposing gas rationing in Los Angeles on a massive scale). "The power to regulate carries with it the power to do so in a manner reasonably calculated to reach that end." *Id.* at 155.

²³In the final FIP, EPA has promulgated under its general 110(c) authority only the rule for farm and construction equipment under 175 hp. See 40 CFR 52.2975.

Title II authorizes national rulemakings establishing emission standards for preempted source categories, including new farm and construction equipment under 175 hp. As we discuss below, in undertaking such rulemakings, EPA must consider the statutory criteria in a national context. See, e.g., section 213(a)(3). It is also apparent from the structure of the Title II provisions that Congress did not intend EPA to use Title II to establish a multiplicity of localized standards on a case by case basis. Moreover, Title II national rulemakings, because of their scope and comprehensive nature, are enormously complex and time consuming to develop. As such, it may not be possible when EPA is under a short term FIP obligation to complete national rulemakings within the time allowed. In contrast to Title II, section 110(c) is targeted at air quality in specific areas, and that section's general authority allows EPA to regulate preempted sources on a temporary, piecemeal basis in a way not contemplated under Title II.

Because we do not agree, as discussed above, with DOD's interpretation of EPA's section 110(c) and Title II authorities, we have concluded that its analysis does not provide a sound basis on which to resolve the SIP credit issue.

CARB, in response to EPA's August 19, 1994 letter, also contended that there is no independent section 110(c) authority. Rather, when a FIP mandate is triggered, EPA's FIP authority is restricted to the authority of the defaulting State. However, CARB maintained that when EPA regulates any sources in a FIP for

which EPA has Title II standard setting authority, EPA is operating under that authority and not section 110(c). Based on this analysis, CARB determined that the State can claim credit in a SIP for all measures promulgated under EPA's national standard setting authority (whether applicable nationally or only within California in the context of a FIP). Thus, CARB concluded that it may claim SIP credit for Title II measures for which California has concurrent or section 209 waiver authority as well as for sources the State is preempted from regulating.

SCAQMD, in its response to EPA's August 19, 1994 letter, supported the conclusions reached by CARB. SCAQMD also cited legislative history relating to the South Coast that it regards as buttressing the argument for crediting FIP measures for sources over which EPA has exclusive jurisdiction.²⁴ And SCAQMD claimed that if SIPs cannot rely on credit from such measures, State and local governments will have to more stringently regulate stationary and other sources within their jurisdiction that are already subject to the most stringent standards in the nation.

The CARB/SCAQMD analysis of the credit the State may claim for FIP measures rests on two basic premises: (1) that nothing in the Act requires measures promulgated in the context of a FIP to be temporary; and (2) that when a State has developed an

²⁴EPA has long disputed SCAQMD's interpretation of the cited legislative history. See, e.g., brief for appellee filed in the 9th Circuit in Coalition for Clean Air v. EPA, Nos. 91-55383, 91-55386, pp. 49-51.

inadequate SIP, Congress intended EPA to cure the inadequacy by adding permanent, creditable Federal measures in order to render the SIP approvable.

EPA believes that a careful reading of the Act makes clear that measures EPA issues pursuant to section 110(c) are intended to be temporary. Section 110(c) provides that the Administrator "shall promulgate a Federal implementation plan at any time within two years after the Administrator...disapproves a [SIP] submission in whole or in part."²⁵ Section 110(c) further provides that EPA is relieved of its FIP obligation when the State "corrects the deficiency" and the Administrator approves the plan. Section 302(y) defines a FIP as a "plan (or portion thereof) promulgated by the Administrator to fill all or a portion of a gap or otherwise correct all or a portion of an inadequacy in a State Implementation Plan...."

A State may not, however, pass the planning obligation on to EPA without consequence. If EPA disapproves a submission, EPA must, under section 179, eventually impose either a cut-off of highway funds or stringent emission reductions on new or modified sources, and in some cases both. Thus, the emphasis in the Act is on preserving the primacy of the State, with EPA's role relegated to one of pinch hitting for the State while the State remains penalized for its failure. EPA believes that it is clear

²⁵A FIP obligation also arises when the Administrator finds that a state has failed to make a "required submission" or that the plan or plan revision submitted does not meet the completeness criteria under section 110(k)(1)(A).

from this statutory scheme that FIPs or portions of FIPs are not intended to be permanent. Thus, section 110(c) and related provisions, along with the structure and legislative history of the Act as a whole, are strong evidence of Congressional intent that the State may not receive full approval for its plan while a defect requiring EPA intervention persists. To decide otherwise would reward a State whose delinquencies resulted in a FIP by alleviating its SIP load, thereby paradoxically making it better off than it would have been had it met its initial SIP obligation. Furthermore, such a State would also have an advantage over other States that meet their planning obligations.

We now turn to the CARB/SCAQMD arguments regarding the appropriate scope of EPA's Title II authorities. In an attempt to capture the maximum credit for federally promulgated measures, CARB and SCAQMD have adopted a far too expansive interpretation of these authorities. EPA believes that in setting standards under Title II, Congress intended that EPA consider the statutory criteria in a national context. In its various waiver provisions, the statute clearly evidences an intent to avoid a multiplicity of separate standards applicable to such sources. See, e.g., section 209(b). Taken to its logical extension, the CARB/SCAQMD position could result in dozens of different standards that would permanently apply to the same sources in dozens of different geographic locations. EPA does not believe that the structure of the Title II provisions is conducive to localized rulemakings in the context of a FIP that, as discussed

above, is intended to be temporary.

EPA does, however, take seriously its responsibility for contributing significantly to attainment of the NAAQS. The Agency has issued guidance that permits States to take credit in SIPs for numerous future national emission standards that are either required by the CAA or subject to court-ordered deadlines.²⁶ States may take credit for these future rulemakings, provided they commit to adopt gap-filling measures to account for any ultimate shortfalls between currently anticipated and actual final rule benefits. These gap-filling measures need not be in the same inventory category as the rule for which they are meant to account.²⁷ See Memorandum from Mary Nichols to Regional Administrators, dated November 23, 1994, entitled "SIP Credits for Federal Nonroad Engine Emissions Standards and Certain Other Mobile Source Programs."

Finally, EPA is not unsympathetic to SCAQMD's claim that California's inability to claim permanent credit from FIP standards for federally preempted source categories may result in

²⁶In addition, as discussed in Section III.B.1.d. of this notice, EPA is contemplating promulgating additional national emission standards for which states would be able to take credit in the future.

²⁷The measures included in the final FIPs for which California may take credit are: (1) 40 CFR 52.2969(b)(1) - nonroad vehicles and engines at or over 37 kW; (2) 40 CFR 52.2969(c)(1) - Phase 1 and 2 nonroad vehicles and engines at or under 19 kW; (3) 40 CFR 2969(d)(1) - marine engines; and (4) 40 CFR 52.2971(a)(4)(i), (ii) and (iii) - locomotives. California SIPs may not, however, claim credit for any increment of reductions from FIP rules in these source categories that exceed the reductions achieved in final national regulations.

more stringent controls on already heavily regulated sources within the jurisdiction of State and local governments. As noted previously, EPA did consider allowing credit for these sources if the State's only alternative was to compensate by imposing unreasonably and inequitably harsher controls on other sources. However, we have concluded that Congress did not intend such a result. As we read the CAA, Congress crafted a carefully calculated balance between emission reductions for which EPA is intended to be responsible under the contemplated statutory scheme and those for which the State must account in a SIP. The CAA indisputably anticipates that a FIP obligation will arise only under unusual conditions, i.e., when State planning efforts have not been sufficient. Even then, a FIP remains in effect only until the State is able to remedy the inadequacy giving rise to that FIP obligation. It simply does not make sense to provide the State with a permanent benefit from FIP measures that neither the State nor EPA could promulgate under any other circumstances.

Having determined that the CARB/SCAQMD position regarding the role of FIPs and the nature of EPA's Title II authorities is faulty, we have not used it as a basis for our current policy on SIP credit.

d. Conclusion.

For the reasons discussed above, EPA reaffirms the policy expressed in EPA's August 19, 1994 letter to CARB. To be approvable a SIP must demonstrate attainment of the relevant NAAQS without reliance on measures that EPA has promulgated

solely pursuant to its general section 110(c) FIP authority. A State is also precluded from claiming credit for FIP-area or statewide measures over which the State has full regulatory authority. A State, however, can rely on measures that EPA has promulgated or will have to promulgate in the future pursuant to explicit independent authority outside the FIP. Thus, as described above, States may take credit for existing or future-mandated Federal measures under EPA's Title II authority.

5. Authority to promulgate statewide measures.

In this document, EPA is promulgating a number of final rules that apply to sources on a statewide basis. These include mobile sources such as onroad vehicles and nonroad engines, and area sources such as pesticides and architectural coatings. Section 110(a) of the Act requires that SIPs must contain control measures that can be effectively implemented and enforced. EPA believes that, by extension, these same requirements apply to measures it promulgates in a FIP. EPA discussed its rationale for proposing to apply certain measures on a statewide basis in the FIP proposal. See, for example, 59 FR 23263, at 23316, 23404, 23431.

While some commenters supported statewide implementation of various FIP measures, a number of others suggested that national rules are preferable in order to reduce the potential for economic hardship and competitive disadvantage in California. EPA has carefully considered these policy arguments and discusses them elsewhere in this document in connection with specific final

rules.

Some commenters, however, asserted that EPA lacks the legal authority, in promulgating FIPs for the three areas, to apply rules statewide because such a regime necessarily requires sources in attainment areas to comply with more stringent requirements than would otherwise apply. EPA continues to believe that the Agency has a legal obligation to ensure, to the extent possible, that it can implement and enforce the FIP programs. Because the intent of the Clean Air Act is that States and localities have the primary responsibility for ensuring attainment of the NAAQS, EPA has been allocated limited resources to devote to implementation and enforcement.

For the programs it has chosen to apply statewide, EPA believes that the potential for circumvention by purchasing small products (e.g., cans of housepaint) or nonroad equipment in neighboring counties is sufficiently great that the effectiveness of the rules, if limited to the FIP areas, would be greatly diluted. Because of the magnitude of the emission reductions needed for attainment in these areas, virtually all sources of VOC and NOx must be regulated. Therefore, as a result of the circumvention factor, rules applicable to these sources would have to be considerably more stringent if they were not applied on a statewide basis. EPA believes that the economic consequences of such enhanced regulation could be extreme. If onroad vehicle rules only applied in the FIP areas, for example, constant traffic flow in and out of the FIP areas would present

an insurmountable enforcement hurdle. Or if different pesticide VOC limits applied in neighboring counties, enforcement would have to be performed at the user, rather than distributor, level.

EPA notes that California has been regulating on a statewide basis many of the sources to which the FIP programs apply. These include motor vehicles, consumer products and pesticides. Others, such as architectural coatings, are regulated locally at this time. EPA believes that individual air pollution districts may be able to demonstrate that they have adequate resources to implement and enforce local rules that EPA cannot. We continue to encourage districts to develop such rules and provide EPA with the requisite resource demonstration so that FIP measures can be replaced as expeditiously as possible.

One commenter contended that, in proposing statewide measures, the Agency failed to justify the need for regulation in non-FIP areas in violation of section 1(b)(7) of Executive Order 12866. Section 1(b)(7) provides that "[e]ach agency shall base its decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation." EPA believes the enforceability concern is adequate justification for implementing measures on a statewide basis. Additional benefits to statewide implementation include consistency, fairness, and reduced costs to industry as discussed, for example, at 59 FR 23316. General compliance with Executive Order 12866 is discussed in Section IV.B of this document.

6. Issues relating to interstate commerce.

EPA is promulgating certain provisions of today's FIP under its authority to "stand in the shoes of the State." Therefore, all the rights and duties that would apply to California if the State were promulgating a SIP instead accrue to EPA. EPA does not agree with commenters that the provisions contained in this FIP promulgated under EPA's authority to stand in the shoes of the State violate the Commerce Clause of the U.S. Constitution. State regulation that furthers a legitimate State interest is permissible so long as it does not discriminate on its face between interstate and intrastate commerce, and will be upheld as long as "the incidental burden imposed on interstate commerce by the [State regulation in question] is not 'clearly excessive in relation to the putative local benefits.'" Minnesota v. Clover Leaf Creamery Co., 449 U.S. 456, 472 (1981) (quoting Pike v. Bruce Church Inc., 397 U.S. 137, 142 (1970)).

California clearly has a strong and substantial interest in reducing emissions from all sources in the FIP areas. It is well established that "[l]egislation designed to free from pollution the very air that people breathe clearly falls within the exercise of even the most traditional concept of what is compendiously known as the police power." Huron Portland Cement Co. v. Detroit, 362 U.S. 440, 442 (1960) (upholding a local anti-pollution ordinance that required ships to make structural changes in their boilers, and did not discriminate between interstate and intrastate commerce).

California's interest in reducing emissions that lead to air pollution is especially strong, because it has one of the worst air quality problems in the nation. The South Coast in particular has the highest ozone levels in the nation, and is the only area classified as "Extreme" for ozone. In addition, it is the only area designated nonattainment for NO₂, the only area classified as "Serious" for CO, and one of only five areas in the Country classified "Serious" for particulate matter (PM-10). The uniquely high levels of pollutants that occur in the South Coast are due to the massive amount of emissions generated in the area, combined with especially adverse meteorological and topographic conditions. Ventura and Sacramento also have among the worst ozone concentrations in the country, with concentrations exceeding the primary health-based standard by one-third. The three FIP areas share physical and climatic characteristics that provide ideal conditions for generation of high levels of ozone: abundant sunshine, high temperatures, mountains that trap pollutants in the basin, and prolonged thermal inversion layers.

Once it is established that there is a legitimate State interest, "then the question becomes one of degree. And the extent of the burden [on interstate commerce] that will be tolerated will of course depend on the nature of the local interest involved, and on whether it could be promoted as well with a lesser impact on interstate activities." Pike v. Bruce Church, Inc., 397 U.S. 137 (1970). EPA is today promulgating requirements applicable to emissions sources in the FIP areas in

California that do not create a burden on interstate commerce that is excessive compared to the State's interest in reducing emissions. Further, EPA has responded to commenters' concerns about potential impacts on interstate commerce in several areas, such as locomotives, heavy-duty vehicles, commercial aviation, and general aviation.

Attainment of the ozone NAAQS requires reductions in 1990 NOx emissions levels of approximately 60 percent for South Coast, 50 percent for Ventura, and 40 percent for Sacramento. Comparable reductions in 1990 VOC emissions levels are necessary for ozone attainment: approximately 80 percent for South Coast, 50 percent for Ventura, and 40 percent for Sacramento.

These massive reduction requirements are above and beyond the uniquely stringent controls already imposed on California mobile, stationary, and area sources. It is clearly necessary to achieve emissions reductions from almost all sources in the State to demonstrate attainment by the applicable dates. This is recognized by CARB and the local air pollution control agencies, and is reflected in the additional provisions of the 1994 SIP, imposing still more stringent controls on mobile sources and reducing almost to zero emissions from many large stationary and area source emissions categories.

While the provisions promulgated today may result in some incidental burdens on interstate commerce, EPA has attempted to minimize any such burdens, without sacrificing the achievement of significant emissions reductions in the FIP areas. The Agency

evaluated other options to achieve emissions reductions, and does not believe that the State's interest in improving air quality in the FIP areas will be advanced to the same degree without the measures contained in today's rule. Moreover, the measures that EPA has selected would not discriminate against products and entities from other States in relation to what is required of products and entities originating or located in California.

7. Rulemaking authorities for final actions.

(a) Interim final.

EPA's proposed FIPs generated a massive public outpouring of comments, criticisms, and suggestions for improvements. EPA reevaluated its proposed rulemakings in light of these comments, and as a result made numerous changes in the formulation of its final rulemakings. Most of these changes in the final rulemakings can be considered as the "logical outgrowth" of the proposed rulemaking, and therefore need not be subjected to further notice and comment. Fertilizer Institute v. EPA, 935 F.2d 1303, 1311 (D.C. Cir. 1991), citing Small Refiner Lead Phase-Down task Force v. EPA, 705 F.2d 506, 547 (D.C. Cir. 1983).

A few of the final rules, however, changed so significantly that EPA determined it would be appropriate to provide an opportunity for supplemental notice and comment. With respect to these rules, the agency has found that good cause exists to issue them as "interim final" rules now, deferring further notice and comment until after promulgation. Under section 553(b)(1)(B) of the Administrative Procedure Act (APA), the Agency may make such

a finding when, as here, providing an opportunity for notice and comment before issuing the final rule is "impracticable, unnecessary, or contrary to the public interest." The agency may issue "interim final" rules, which it may modify after post-promulgation procedures. Under the APA, interim final rules are final for the interim period lasting until the Agency takes further final action following consideration of the post-promulgation comments, and persons "adversely affected or aggrieved" may challenge these rules in court. 5 U.S.C. section 702. American Transfer & Food Storage v. ICC, 719 F.2d 1283 (5th Cir. 1983).

In the circumstances presented here, holding further public procedures prior to promulgation is impracticable because EPA could not complete them before the court-ordered deadlines for promulgation of the final FIPs. Throughout these rulemakings EPA acted diligently and in good faith to provide ample opportunity for notice and comment through the extensive, exhaustive public process that followed the issuance of the proposal. In an effort to obtain maximum public input into the rulemaking, EPA held three separate hearings and innumerable workshops, meetings, and discussion groups on all aspects of the FIP. At the close of the original comment period on August 31, 1994, the volume and complexity of the comments received, and the scope and difficulty of the issues they addressed, caused EPA to undertake a comprehensive reevaluation of its proposed control strategies. At the time EPA arrived at the revisions it felt compelled to

make to the proposed measures, it would have been impossible for the Agency to undertake additional public participation and still live up to its obligation to meet the court-ordered deadlines for final promulgation in February 1995. EPA felt bound by these deadlines. It was therefore impracticable for EPA to permit further notice and comment prior to the dates for FIP issuance.

With respect to the relatively few measures that changed drastically enough to require further public process, EPA was faced with the choice of making those changes on an interim-final basis (i.e., subject to post-promulgation public process), or leaving the original proposals as they were and letting them take form as final rulemakings. EPA believes that it would be contrary to the public interest to promulgate measures that we have already re-thought in response to the initial comments and wish to discard as inappropriate. Promulgating such measures would confuse the public, disserve the regulated community, disregard the public comments that justifiably sought revisions to such measures, and could lead to serious dislocation.

"Fortunately, courts uphold the exercise of such practical wisdom by regulatory agencies." American Transfer & Storage Co. v. ICC, supra at 1294.

For any rule being issued today in interim final form, EPA intends to initiate follow-up proceedings allowing for public participation and comment on those aspects of the rule for which such an opportunity did not previously exist. Thus the scope of EPA's interim final action is narrow, since there will be only a

temporary period during which these rules will be in place without the benefit of additional public process. The interim rules are confined to the period until EPA can complete appropriate further public proceedings, and consider any revisions that may be advisable in light of any comments received.

(b) Direct final.

Several rules promulgated today are being issued in direct final form. EPA has recently expanded the use of direct final rulemakings to include any action for which no adverse public comment is anticipated, regardless of whether the rule is broadly substantive or merely involves trivial administrative changes. See 59 FR 24054 (May 19, 1994). In accordance with EPA's most recent statement on direct final rulemakings, for any such direct final rule, EPA publishes concurrently with the direct final rule a brief proposal that informs the public of the direct final rulemaking. The proposal states that if any adverse comments are received, EPA will issue a withdrawal notice in the FEDERAL REGISTER, but the substance of the direct final document will then serve as a proposed rule action. Any comments received will be addressed and resolved in the final promulgation. If no comments are received, the direct final action will become effective without additional action. This revised procedure eliminates the need for a new proposed rule and comment period in the event the direct final notice generates comments.

8. Sufficiency of notice and basis.

Section 307(d) of the Act applies to the promulgation of this FIP. It establishes certain requirements that must be followed in this rulemaking, including the requirement to publish a statement of basis and purpose for the rule (section 307(d)(3)). The statement of basis and purpose is required to contain a summary of (1) the factual data on which the proposed rule is based, (2) the methodology used to obtain and analyze the data, and (3) any major legal interpretations and policy considerations. EPA believes that by complying with these requirements of Section 307(d)(3), EPA has provided adequate notice to the regulated community consistent with due process of law.

A commenter asserted that the FIP failed to provide sufficient notice and basis as required in section 307(d). EPA disagrees. The proposed FIP contains a multipage Executive Summary (see 59 Fed. Reg. 23,269-23,278) and a statement of the basis for the FIP actions in applicable law and EPA policies (see 59 Fed. Reg. 23,287-23,292). The proposed FIP fully complies with the requirements in Section 307(d)(3) to provide a statement of basis and purpose for the proposed action. Moreover, EPA's proposed FIP fully complies with all other procedural and substantive requirements of Section 307(d). EPA's FIP proposal was sufficiently detailed to provide the regulated community with an opportunity to comment in a meaningful way on the proposed rules affecting them.

The same commenter also notes that EPA did not hold meetings

with the affected industries for their input prior to publication of the proposed FIP. The commenter characterizes this as unprecedented. However, EPA is not under any statutory or regulatory obligation to meet with all of the affected industries prior to promulgating a rulemaking. Thus, the failure to meet with industry prior to publishing the proposed FIP is not a violation of Section 307(d) or a contravention of due process of law.

EPA disagrees with the comment and is not taking any action to revise or modify the FIP proposal based on this comment. EPA has followed all of the requirements set forth in Section 307(d) for notice and comment in conjunction with the FIP proposal. EPA held numerous public hearings and has attended meetings of focus groups of industry representatives. There has not been any violation of due process of law or a failure to comply with Section 307(d).

9. Changes to the FIP technical foundations.

In the proposal, EPA used the most recent data available at the time regarding emissions levels in 1990 and emissions projected for the attainment dates. Many commenters urged EPA to take advantage in the final FIP of more recent and accurate growth projections, usage levels, emission factors, modeling input, and other technical updates and analytical improvements that were completed after EPA's proposal. The proposed FIP repeatedly indicated EPA's intention to do so, and the final FIPs are largely based on new and corrected data and analyses which

generally derive from the most recent State and local SIP submittals or information provided to EPA during the public comment period on the FIP proposal.

EPA believes that making these technical amendments to the proposed FIPs is in the public interest. All commenters emphasized that the FIP attainment demonstrations and regulations should have the most accurate data and analytical foundations. EPA also believes that these data--inventories, usage rates, traffic information, and growth rates--are the sort of purely local information that are updated regularly at a local, regional, and State level, and such data cannot be duplicated by a Federal agency. The Agency wishes to facilitate timely replacement of the FIPs by the SIPs, and thus we have attempted to use in the FIPs, wherever possible, data and assumptions employed in the most recent SIPs.

While EPA has identified the more significant technical changes both in this document and associated technical support documents, EPA is not providing opportunity for further comment on the technical changes. Further public comment is not necessary because EPA's use of updated data is a natural outgrowth of the proposal, and most of the technical revisions were exposed to extensive formal and informal public review and comment during State and local plan adoption processes. Furthermore, since EPA did not receive much of the data until the final 1994 SIPs were drafted in late 1994, there was no time for public comment at the Federal level before FIP promulgation.

As expressed in the FIP proposal, EPA is committed to making technical improvements to the FIP as may be necessary or appropriate, even after promulgation. EPA intends to provide the public with opportunities for review and comment on significant technical changes.

B. General FIP Provisions and Issues

1. Overarching Issues

a. Apportionment of emission reduction responsibilities

EPA proposed regulations for almost every source in the FIP areas. At the time, and in the absence of other decisions by the local areas, EPA believed that the extent of the air quality problem, as well as principles of equity, demanded that emission reductions must come from every reasonable source of pollution -- from cars to refineries to hand-held spray paint. What part of the solution each source should contribute, and how to fashion those contributions into a plan presented a significant challenge in the development of the FIPs. These decisions are by nature local decisions because they involve choices about local priorities, but during the development of the FIP proposals, the local choices were still being formed. EPA as a national agency felt that it could not make these decisions but could be a catalyst for discussion, debate and solutions at the local level. By proposing regulations for almost all sources, everyone would share responsibility for the pollution problem as well as the solution.

In fact, in all three communities, environmental, business,

and local leaders did come together and in some cases even offered joint comments to EPA, the State, and local agencies on alternate measures they prefer. EPA carefully reviewed the concerns, criticism, and alternatives offered by the wide array of interest groups, industries and local communities.

EPA's processes and the processes of these community groups were going on simultaneously with the processes of CARB and the local air districts to develop the SIPs. Many of the community groups were deeply involved in these local decisions. From the beginning of the FIP development process EPA said that it was appropriate for the allocation decisions to be made locally. Therefore, in this final rule EPA has relied upon the choices made in the recent SIP submittals to guide its reduction targets as much as possible.

One important place where the Agency was unable to take the communities' views into account was with respect to fees on the pollution caused by individual vehicles. Fees based on mileage or mileage and pollution level can be effective tools to reduce the pollution from motor vehicles, the largest source of pollution in the three FIP areas in 1990. However, as discussed in section III.A.3., if EPA were to implement such a program, it would not be able to return the funds to the public due to the Miscellaneous Receipts Act. Returning the funds is an important aspect of these programs because the funds can be used to repair existing cars, to purchase clean new cars, to offer alternative transportation opportunities and for other purposes which enhance

the effectiveness of the programs. Therefore, although EPA supports local adoption of these programs, and believes that they can achieve large creditable emissions reductions, there are no such programs in the FIPs. EPA is, however interested in helping the local FIP areas in any way it can to develop such programs and to use them to reduce the FIP emission reduction requirements placed on other sources, especially, stationary sources.

b. Socio-economic impacts

In the proposed FIPs, EPA attempted to meet the attainment obligations while avoiding unnecessarily severe social and economic impacts, both through the choice of the particular regulations and by the timing of their implementation. Unfortunately, because of the extraordinary emission reductions required, the advanced level of control that already exists, and the constraints on EPA's authority and practical ability to enact and implement many of the most appropriate control approaches for these areas, some impacts were unavoidable. Current control strategies in these areas, especially in the South Coast, already employ state of the art technology and regulatory design for many pollution sources.²⁸

As with making decisions regarding allocation of reductions, State and local agencies are in a far better position to tailor plans for the areas that minimize any adverse impacts of the attainment obligations. They have a better understanding of

²⁸This rulemaking is designed to achieve the substantial emission reductions required in these three areas and is not necessarily appropriate for areas with lesser problems.

their emission sources and their local communities. But more importantly they can also achieve significant mobile source reductions from transportation and land use measures that are beyond EPA's resources and authority to implement directly.

For example, the South Coast is considering how to consolidate freight movement along the Alameda Corridor. Depending on the chosen design of these and other similar projects there could be large, beneficial impacts on air quality. However, of course, there will be other impacts from these projects, such as development of unused land or increased industrial use of some neighborhoods. The local governments and industries are at this time weighing the costs and benefits of these projects and can factor air quality into these equations. EPA is not an important player in these purely local decisions. EPA cannot include decisions that have not yet been made in the FIPs, but has used data regarding population and transportation provided by responsible local groups in developing its clean air strategy.

EPA received many comments that the projected negative socio-economic impacts of the FIP were unacceptable. These commenters generally acknowledged that clean air was an important goal, but raised concerns that job losses and other negative economic consequences of the FIP outweighed the costs and impacts of unhealthful air. EPA also received comments that certain land use projects on the drawing board should be credited since they had positive socio-economic impacts while reducing emissions.

Many commenters suggested that EPA should set reduction goals for everyone and allow trading to minimize the socio-economic impacts.

In this final rule EPA has tried to respond to as many of these concerns as possible. Unfortunately, the limitations of Federal rulemaking are significant and therefore all concerns raised could not be resolved. As a Federal agency, we are poorly set up for the sorts of intimate relationships necessary to develop large scale trading programs or to credit changes in land use patterns which we are not involved in planning.

In order to best overcome our limitations though, this final rule does two things. First, it is based on the most recent California SIP submittals. The SIPs were thoroughly analyzed as to socio-economic impact by the Governor's Office of Planning and Research, the California Business, Housing and Transportation Agency, CARB and their independent consultants. All of these parties agreed that the costs of the SIP, though formidable, were reasonable compared to California's expected gross income and production over the period of implementation. On the basis of this information, CARB adopted the SIP and we use it as a model.

Second, where it was impossible to use the SIP as a model because of our lack of practical authority or enforcement and implementation ability to enforce, we have explained how a State program could replace our program. Often, we explain how a program committed to by CARB or one of the Districts will replace our program when adopted. Where there is no currently planned

local program we explain how the State could add flexibility or other benefits to a similar program if they desired to adopt it. Other actions already committed to by the State could also be used to replace the FIP programs. By these two actions in combination with significant changes to many of the rules, EPA has reduced the socio-economic impacts as much as possible in a Federal plan. Interested readers are referred to the specific program sections for more information on these changes.

c. Compliance dates

The proposed FIP rules had a variety of implementation dates, including some schedules that required compliance shortly after FIP promulgation. Most of the proposed FIP mobile source measures and the more challenging stationary source measures, however, had compliance dates at least several years later, both to allow affected industry sufficient lead time to implement needed controls and to allow sufficient time for adoption of replacement SIP regulations.

Various parties, including members of Congress from across the State and the Governor of California, have requested that EPA schedule implementation dates of all FIP measures so that compliance would not be required before the State's replacement SIPs could be reviewed and approved by EPA. They argue that the State's SIP should be given the same time for review and approval afforded to every other State.²⁹

²⁹See the August 18, 1994 letter from Congressmen Fazio, Lewis, Stokes and Waxman, and Senators Feinstein and Mikulski to Administrator Browner and the September 1, 1994 letter from

EPA agrees that the State of California should be given the same opportunity as every other State to develop workable ozone attainment plans. EPA has tried to use these FIPs to encourage public support of the State and local planning processes.

Further, given the State and local commitments to submit enforceable replacement regulations in the near-term, we believe it would not be responsible public policy to set deadlines which would require industry to comply with FIP measures while State and local substitute rules are in the process of being adopted.

Because it is the policy of the Clean Air Act to place primary responsibility on States to prepare attainment plans, EPA believes it is appropriate to agree to California's request. Therefore, the FIP rules promulgated today have compliance dates no earlier than May 15, 1997. This decision is consistent with EPA's court-ordered FIP obligation to issue plans that provide for attainment as expeditiously as practicable but no later than the applicable attainment deadlines.

Also consistent with EPA's support for maintaining the primacy of State and local air planning processes is the effective date established for the FIP portions of this rulemaking. The February 14, 1997, effective date for the final FIPs provides a two-year breathing period, during which EPA intends to devote all the resources necessary to ensure that the recently submitted California SIPs can be approved and the FIPs can be rescinded in their entirety. This effective date received

Governor Wilson to President Clinton.

the support of the plaintiffs in the South Coast FIP lawsuit, and of the business community, which agreed that the two-year period provides more certainty that regulatory choices are going to be made and carried out at the State and local level.³⁰

Other commenters addressed only the compliance dates of specific proposed FIP rules. These comments have been considered and are addressed in the appropriate preamble and technical support document sections of today's action. The alternative compliance dates proposed in these comments were considered in light of their consistency with State plan commitments as well as their ability to provide sufficient lead time for compliance and their ability to produce the level of emission reductions necessary to achieve expeditious attainment of the ozone standard.

d. National and International Standards

EPA proposed to take credit for all national emission reduction requirements which were in place or for which there was an enforceable deadline under the Act. These emission reductions involved cars, trucks, utility equipment, farm and construction equipment, marine engines and locomotives. EPA also credited certain changes in emission levels due to international efforts, such as the International Civil Aircraft Organization (ICAO) efforts to reduce airplane emissions. All of these programs have

³⁰The February 14, 1997, effective date was approved by the U.S. District Court on February, 6 1995, as modification to a prior settlement agreement between EPA and the Coalition for Clean Air and Sierra Club. The prior stipulation provided that the FIP would have an effective date no later than 30 days from publication.

been included in the original baseline inventory for the attainment years. EPA's proposed control strategies for the FIP, however, were otherwise limited to California. EPA proposed only California programs because the emissions reductions required were only in the FIP areas.

EPA received many comments suggesting that for certain categories national standards are more appropriate than FIP-area or statewide standards. These comments came from the California Air Resources Board (CARB), heavy-duty engine manufacturers and engine users, among others. EPA also received comments from the Northeast States for Coordinated Air Use Management (NESCAUM) pointing out that the Northeast States' attainment and maintenance demonstrations would be simplified with national standards.

These commenters made several arguments in favor of national standards. Many people felt that California businesses would be put at a competitive disadvantage if the standards applying to their engines were significantly more stringent than those applying to other companies. CARB pointed out that in previous instances when California required tighter truck engine standards than the rest of the country, sales of new trucks in California fell by fifty percent. This drop implied that many people circumvented the intent of the lower standards by purchasing trucks outside of California for use in California. For some equipment there was a fear that the California market was not large enough to support production of equipment only for that

area. Finally, of course, other States desired the emissions reductions they could gain from national standards. Each of the issues raised by the commenters will be discussed in more detail in the section of this final FIP rulemaking pertaining to that equipment.

EPA had considered these issues in developing the original FIP proposals and also believes that national standards can result in much-reduced per-unit economic costs and increased air quality benefits compared to local standards. Therefore, EPA intends to proceed expeditiously in gathering the necessary data to initiate a rulemaking for national standards for heavy-duty trucks and nonroad engines. However, EPA does not believe it is appropriate or even possible to set these standards today via an interim final rulemaking. The broad array of interests and stakeholders who would be affected by these rulemakings must have ample opportunity to comment on any proposed new standards. Additionally, we can finalize in this FIP the large majority of the emission reductions achieved by national standards by finalizing standards for California at the same control levels as we intend to consider adopting in a national rulemaking. Interested readers are directed to the sections of this preamble dealing with specific engine or equipment types for more detailed information about EPA's plans.

EPA agrees that international standards are the most efficient mechanisms for achieving emissions reductions from ocean-going ships and aircraft. For these source categories,

international bodies (such as International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO)) set and enforce standards for the vast majority of engines independent of any single nation's rulemaking procedures. EPA does not have unilateral authority to finalize today any international standards. But, EPA will be working expeditiously to move the international processes forward and to adopt the international decisions into Federal regulations. In the meantime, EPA has designed its control strategies to rely on only the standards likely to be adopted in the time period necessary. Interested readers are directed to the sections of this preamble discussing national mobile sources of pollution for more information.

e. FIP enforcement and EPA resources

Unless they are replaced by SIP measures or amended in the future, EPA is obligated to implement and enforce the measures it promulgates in FIPs. This obligation constrained EPA to propose and finalize only those measures for which EPA has the authority and ability to enforce.

Some commenters expressed concern that many of the proposed FIP measures did not contain all of the elements necessary for EPA to adequately enforce them. EPA agrees with this comment and has in some cases added these elements to the final rules promulgated today. In the remaining areas where more work is needed, EPA plans to develop the necessary elements before the implementation deadlines, most of which are after 1999.

Other commenters expressed concern that EPA has not yet set aside adequate resources to implement the FIP measures it is promulgating. EPA already has an established program for enforcing SIP requirements and national rules, and the Agency would employ that program to enforce the requirements on which today's FIP relies to demonstrate attainment. Moreover, as we have discussed, the commitments made in the recent SIP submittals lead EPA to believe that the State will be able to replace the FIP measures before EPA would need to implement them. If this does not turn out to be the case, EPA will take any additional steps ultimately determined necessary to ensure that the FIP measures are fully enforceable and that EPA has the resources necessary to implement them by their respective implementation dates.

EPA received many comments on the current or future enforceability of specific proposed FIP measures. These comments have been considered and are addressed in the appropriate preamble and technical support document sections of today's action.

2. [RESERVED]

3. Sacramento Ozone FIP. As discussed in section II.C. of this preamble, CARB and the Sacramento local air agencies have adopted and submitted to EPA a Sacramento ozone attainment plan. While it has been and still is EPA's goal to replace the FIP with a SIP, until the State and local plans are fully evaluated and

approved by EPA, EPA must continue efforts to meet its court-ordered FIP obligation. In the final FIP, EPA has made every effort to be consistent with the State's attainment plan submitted to EPA.

a. Inventories and reduction requirements. As described in the FIP proposal at 59 FR 23294, EPA proposed that 40 percent VOC and 30 percent NOx reductions from 1990 anthropogenic emissions were necessary to attain the NAAQS in Sacramento. This meant that the inventories had to be reduced from 236 tpd of VOC and 185 tpd of NOx to 140 tpd of VOC and 130 tpd of NOx. EPA used the best available information at the time of proposal and understood that further modeling analysis performed by CARB could yield improved emissions reductions targets. In the proposed FIP, EPA explained its plans to incorporate any improved information that became available in the final FIP.

Since the FIP proposal, CARB has completed its modeling analysis and has determined that a 39 percent reduction in VOC and 40 percent reduction in NOx from the Sacramento area's 1990 baseyear inventory will achieve attainment and has based its SIP on these reduction targets. These new reduction targets, along with minor adjustments to the emissions inventories, means that the VOCs must be reduced to 136 tpd and NOx must be reduced to 98 tpd. The final FIP is based on CARB's targets because EPA believes that they are the most technically sound numbers at this time.

EPA received comments from the Sacramento air agencies

asking for consistent emissions inventories and emissions reductions targets between the SIP and the FIP. EPA has worked with CARB in the last year to achieve this goal.

b. 1999 and 2005 attainment options. As discussed in the FIP proposal at 59 FR 23294, EPA proposed two attainment demonstrations for the Sacramento area; one with a 1999 attainment date and one with a 2005 attainment date based on a reclassification to "Severe". Since the FIP proposal, the State has requested a bump-up of the Sacramento nonattainment area to "Severe" under section 181(b)(3) of the Act, and in a separate Federal Register, EPA is granting this request. Under section 181(b)(3), once a State has requested a bump-up to a higher classification, EPA must grant the request. Thus, EPA's final FIP for Sacramento is based on a 2005 attainment date. Because EPA has reclassified the Sacramento nonattainment area pursuant to the State's request, EPA is withdrawing the proposal to reclassify the area on the Agency's own initiative.

c. SIP rules. The State and local air agencies are continuing to develop and adopt rules for submittal to EPA. A summary of recently adopted rules and rules scheduled for adoption in the next year can be found in the Sacramento Regional Ozone Attainment Plan.

As proposed, EPA is not acting on any Sacramento-specific SIP measures as part of this document, but plans to continue evaluating such measures on a case-by-case basis. For purposes of the attainment demonstration in this document, EPA generally

continues assigning credit to only those State and local measures that have been adopted by the State and local agencies, submitted to EPA and approved as SIP revisions.

Since the FIP proposal, two FIP rules has been replaced by SIP rules which have been adopted, submitted to EPA and approved into the SIP. Placer's Rule 230 Plastic Products and Materials-Paper Treating Operations replaces the FIP proposed rule 40 CFR 52.2961(p), RACT determination - Formica Corporation. And SMAQMD's Rule 458, Large Commercial Bread Bakeries replaces the FIP proposed rule 40 CFR 52.2961(f), Commercial bakeries. The proposed FIP rules are not being promulgated. Further discussion of these rules are provided in section III.C.1 and III.C.2.f.

d. FIP rules.

(1) Stationary source rules. The set of FIP stationary source rules proposed for the Sacramento area consisted of regulations common to all three FIP areas plus several measures tailored to particular needs of the Sacramento area. For VOC emissions, these included four rules for specific facilities and rules for the following specific categories: architectural coatings, consumer products, pesticides, auto refinishing, adhesives and sealants, livestock waste, can and coil coating, municipal landfills, solvent cleaning operations, waste burning, wood products coatings, service stations, and fugitive emissions. For NOx, EPA proposed rules for residential water heaters, biomass boilers, gas turbines, internal combustion engines, and boilers and steam generators.

Most of the rules mentioned above are being finalized, some with modifications which respond to public comments. Rules that are not being finalized for the Sacramento FIP include: 40 CFR 52.2961(p) RACT determination - Formica Corporation, which has been replaced by a SIP rule; 40 CFR 52.2961(e) Can and coil coating operations, which YSAPCD commented does not affect any sources; 40 CFR 52.2961(f) Commercial bakeries, which has been replaced by a SIP rule; 40 CFR 52.2961(h) Emissions from livestock waste, which will not be promulgated until further technical analysis on VOC emissions is completed; and 40 CFR 52.2961(k) Emissions from waste burning.

In addition, EPA is not promulgating 40 CFR 52.2952, the VOC cap program proposed for stationary sources of VOC in the Sacramento area. Among the most significant reasons for removing these measures were: inventory and modeling information provided in California's 1994 SIP submittal, public comment overwhelmingly opposed to the cap programs, the relatively high cost effectiveness of the cap programs compared to many of the technology-based FIP measures, and consistency with the State and District SIP planning effort.

A summary of comments, EPA responses, and specific changes to each of the proposed rules is provided in section III.C of this document.

(2) Mobile source rules. The mobile source measures proposed for implementation included controls on motor vehicles, nonroad engines, and forthcoming national regulations for

locomotives. Generally, EPA will be finalizing most of the mobile measures, most with modifications responding to public comments. Measures that will not be promulgated include: general aviation due to safety concerns with the proposed measure and negative growth in the sector that effectively achieves the desired emission; and recreational boat fees, because the VOC reductions they achieved are not necessary given CARB's revised growth rates for the area. A summary of comments, EPA responses, and specific changes to each of the proposed rules is provided in section III.D of this document.

For the Sacramento area, EPA also proposed several measures (no-drive day, nonroad growth cap, accelerated heavy-duty truck fleet standard, and recreational boat fees), that would be needed if a 1999 attainment date were finalized. However, as discussed above, since the State has requested a bump-up of the Sacramento and EPA must grant this request, the FIP measures proposed for the 1999 attainment date will not be finalized.

(3) "Severe" area requirements. As discussed at 59 FR 23297 of the FIP proposal, a bump-up of the Sacramento area from "Serious" to "Severe" leads to the following additional Clean Air Act requirements associated with a "Severe" area classification:

(1) A more stringent major source definition (25 tpy, down from 50 tpy); (2) a more stringent offset requirement for new major sources (1.3:1 instead of 1.2:1); (3) TCMs to offset VMT growth and; (4) an employer-based trip reduction rule for an Employee Commute Options (ECO) program. Because there was no State

request at the time of the FIP proposal, EPA proposed to initiate a bump-up. While EPA concluded that it had no legal responsibility for meeting the "Severe" area requirements as a result of such a unilateral reclassification, EPA believed that as a policy matter, it made sense to propose regulations for these requirements. Thus, EPA proposed an ECO rule and a new source review (NSR) rule to meet the "Severe" area requirements (59 FR 23386). EPA also provided discussions of how requirements for RACT for 25 ton per year sources, TCMs to offset VMT increases and reformulated fuel would be met.

However, since the State has requested reclassification for the Sacramento area, these requirements are now clearly the State's responsibility. Thus, EPA is not promulgating the ECO³¹ and NSR rules which were proposed to address the "Severe" area requirements.

e. Attainment demonstration. As discussed in section III.G. of this preamble, EPA believes that the set of measures contained in this document along with the State and local measures are sufficient to bring the Sacramento area into ozone attainment by 2005. This projection is based on extensive computer simulations of ozone formation using the UAM.

4. Ventura Ozone FIP.

³¹ In anticipation of promulgating an ECO rule in Sacramento, EPA had a contractor provide the names and addresses of all of the affected employers, additional research on the baseline calculation and model survey forms that could be used for the program. All of this information will be provided to the air districts in the Sacramento area for their use.

a. Reduction requirements. EPA received several comments on the uncertainty of the modeling and reduction targets used in the proposal. In order to take advantage of the best available information, the final FIP reduction requirements rely on the same inventory and modeling information as used in the 1994 AQMP and SIP. California estimates 1990 emissions in Ventura at 87 tpd VOC and 81 tpd NOx, which must be reduced to 45 tpd VOC and 40 tpd NOx in order to achieve the ozone NAAQS. These revised targets replace those used in VCAPCD's 1991 AQMP and the FIP proposal, and incorporate numerous improvements to the inventory and modeling procedures. Further discussion of the inventory and attainment demonstration is found in Sections II.D. and III.G.

b. SIP rules. The State and local air agencies are continuing to develop and adopt rules for submittal to EPA. A summary of recently adopted rules and rules scheduled for adoption in the next year can be found in Ventura component of the SIP submitted to EPA on November 15, 1994.

As proposed, EPA is not acting on any Ventura-specific SIP measures as part of this document, but plans to continue evaluating such measures on a case-by-case basis. For purposes of the attainment demonstration in this document, EPA generally continues assigning credit to only those State and local measures that have been adopted by the State and local agencies, submitted to EPA and approved as SIP revisions.

c. FIP rules. The FIP stationary and area source rules promulgated today for Ventura include the common measures that

affect aerosol paints, architectural coatings, pesticides, fugitive VOC emissions, service stations, and waste burning. In addition, measures for solvent cleaning and wood product coatings are being promulgated specifically for the Ventura and Sacramento areas. EPA modified many details of these measures in response to public comments (see III.C), but the general control strategies are being promulgated as proposed.

EPA is not promulgating the stationary source cap programs proposed for VOC and NOx sources greater than four tons of emissions per year. Among the most significant reasons for removing these measures were: inventory and modeling information provided in California's 1994 SIP submittal, public comment overwhelmingly opposed to the cap programs, the relatively high cost of the cap programs compared to many of the technology-based FIP measures promulgated today, and consistency with the State and District SIP planning effort.

CARB and VCAPCD are currently developing SIP measures intended to replace most of the promulgated FIP stationary source measures. EPA encourages interested parties to continue to work with these agencies to develop effective local rules.

The FIP measures for mobile sources affecting Ventura are generally the same as those discussed in section III.B.5 for South Coast. EPA has significantly modified many of the proposed measures, including removing almost all proposals for fee systems. The ship strategy is particularly relevant to Ventura, as it includes a commitment to reduce ship emissions off the

Ventura coast.

d. Attainment demonstration. As discussed in Section III.G., EPA believes that the set of measures contained in the FIP, along with the adopted State and local measures, will bring Ventura County into attainment with the ozone standard by 2005. This projection is based on extensive computer simulations of ozone formation performed using the UAM.

e. Alternative FIP. EPA received several comments suggesting different combinations of control measures to attain the ozone NAAQS. Most notably, an "alternative FIP," was prepared by the Ventura County Economic Development Association (VCEDA) and the Ventura Council on Economic Vitality (CEV), and endorsed by a wide range of Ventura industry and government representatives.

EPA modified many specific FIP measures in response to the alternative FIP and other comments as discussed in Sections III.C and III.D. and in the technical support to this action. Not all comments were incorporated, however, because of equity, cost-effectiveness, enforceability, and other concerns. Some of these concerns may be viewed differently by Ventura and California, and EPA strongly encourages VCEDA and other commenters to continue working with VCAPCD and CARB to develop SIP regulations that better meet the needs of the local communities.

A summary of the major recommendations from the alternative FIP follows. EPA encourages readers to review Sections III.C and III.D. and the technical support document for detailed responses

to these and other comments on specific FIP control measures.

(1) VOC cap program. VCEDA recommended either deletion or significant modification to the VOC cap program proposed at 40 CFR 52.2953. Based partly on inventory and modeling information submitted by California and on near consensus public comment, EPA has not promulgated the VOC cap program for stationary sources in Ventura.

(2) Fugitive emissions for oil and gas facilities. VCEDA recommended technical modifications to proposed 40 CFR 52.2961(i) and (t) regarding, for example, definitions, recordkeeping, exemption provisions. EPA has incorporated many of these recommendations in the FIP, and VCAPCD has used VCEDA's comments in drafting an analogous SIP measure. EPA has, for example, largely delayed implementation of the 500 ppm leak definition in §59.2961(i).

(3) NOx cap program. VCEDA recommended either deletion or significant modification to the NOx cap program proposed at 40 CFR 52.2955. Based partly on inventory and modeling information submitted by California and on near consensus public comment, EPA has not promulgated the NOx cap program for stationary sources in Ventura.

(4) Pesticides. VCEDA recommended removing proposed 40 CFR 52.2960 and relying on the California Department of Pesticide Regulation (DPR) to reduce VOC emissions from pesticides. EPA has finalized a FIP pesticide measure, but will continue supporting DPR's rule development process in order to ensure that

the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

(5) Ships and ports. EPA has significantly changed 40 CFR 52.2973 as a result of comments from VCEDA, the Navy, and others on the proposed port fee system.

(6) Commercial and general aviation. EPA has removed the commercial and general aviation fee components from proposed 40 CFR 52.2970 as a result of comments from VCEDA and others.

(7) Inspection and maintenance program. As recommended by VCEDA and others, EPA has finalized the enhanced I/M program as proposed at 40 CFR 52.2963.

(8) Enhanced ILEV fleet program. VCEDA recommended implementing proposed 40 CFR 52.2962 in Ventura as well as South Coast. EPA is finalizing the program in Ventura as suggested.

(9) Vehicle miles traveled fee program, vehicle buy-back program, remote sensing. These measures are not yet adequately developed for inclusion in the FIP, but VCEDA believes they could reduce the need for additional stationary source controls. Such programs rely on collection and disbursement of fees to facilitate compliance. EPA, however, is prohibited from using any funds it collects. Therefore, while EPA strongly supports demand side, economic incentive, and other innovative mobile source measures, it is not the agency appropriate to implement such programs. EPA hopes to continue working with VCAPCD and CARB to develop the pilot program under SB-2050 and other measures for future implementation at the State and local level.

(10) Heavy-duty on-road and non-road engines. EPA has significantly modified 40 CFR 52.2966 in response to comments from VCEDA and many others. EPA has, for example, changed emission standards, delayed implementation schedules, and extended many requirements to national implementation.

(11) Locomotives. VCEDA has recommended national standards for new and remanufactured locomotives. EPA is developing national standards on a parallel track to the FIPs, and is considering VCEDA's recommendations in that process.

5. South Coast ozone FIP

a. Reduction requirements.

The final FIP reduction requirements are based on the same inventory and reduction requirements recently adopted by the SCAQMD in their 1994 AQMP and by the State in its SIP. EPA's use of updated inventory and attainment targets in the final FIP is consistent with numerous comments received. The South Coast Air Basin inventory includes 1990 estimates of 1,524 tpd for VOC and 1,367 for NOx, and a 2010 attainment year inventory estimate of 1,045 for VOC and 907 for NOx. The attainment year inventory reflects reductions from all previously adopted measures.

Modeling analyses performed by the SCAQMD indicate that in order to achieve the ozone NAAQS, the 2010 attainment year emissions inventory will need to be reduced to 323 tpd for VOC and 553 tpd for NOx. The revised targets replace those in 1991 AQMP and proposed FIP (187 tpd for VOC and 399 tpd for NOx). The 1991 AQMP targets were premised upon attaining the NAAQS for

particulate matter as well as ozone.

The revised inventory and reduction requirements indicate that emissions in the South Coast Air Basin must be reduced from the 1990 inventory by 79 percent for VOC and 59 percent for NOx. Compared to the projected baseline 2010 inventory, emissions must be reduced by 69 percent for VOC and 39 percent for NOx.

Additional discussions of the inventory and attainment demonstration are found in Sections II.E.1. and III.G.

b. SIP rules.

This final FIP continues to rely on the very substantial emission reductions achieved by the South Coast through their adopted and SIP-approved rules. Between the proposed FIP and the final promulgation, SCAQMD adopted the 1994 AQMP and CARB adopted its statewide control plan, both of which establish ambitious blueprints for future rule development, adoption, and implementation. With few exceptions, neither SCAQMD nor CARB adopted and submitted enforceable SIP rules during this period that could be assigned credit to further reduce the FIP's emission reduction burden.

EPA's attainment demonstration may rely, however, on SCAQMD's and CARB's section 182(e)(5) new-technology measures to achieve the emissions reduction targets in the FIP. See discussion in Section II.F.4. The State and local new-technology measures together achieve substantial reductions by the 2010 attainment deadline: 319 tpd VOC and 106 tpd NOx. This allows EPA to replace some of the section 182(e)(5) provisions in the

proposed FIP with approval of the SCAQMD and CARB SIP (see Sections III.B.5.d. and III.F.), below.

c. FIP rules.

The FIP stationary and area source rules promulgated today for the South Coast ozone FIP include the common measures described in the Executive Summary and individually discussed below. These controls apply to aerosol paints, architectural coatings, pesticides, fugitive VOC emissions, service stations, waste burning, and industrial sources subject to the VOC cap rule. As noted in Section III.C.4.a.(3), the final FIP includes, as a temporary FIP measure, a NOx cap rule for stationary sources, since the comparable SCAQMD NOx/SOx RECLAIM rules have not yet been approved by EPA.

The public comments did not propose specific new or replacement stationary source controls, but commenters generally emphasized that neither conventional nor fee-based rules should precede the development of feasible technologies to allow for compliance without economic penalty. Further, commenters encouraged EPA to achieve needed emission reductions through incentives rather than disincentives. EPA will continue to investigate new technologies and market incentives which can be used in whole or in part to replace FIP measures. EPA strongly encourages interested parties to continue to work with SCAQMD, CARB, and Federal regulators in the development of new technologies and incentives necessary for ozone attainment.

With respect to mobile sources, the FIP includes controls on

motor vehicles and nonroad engines including national standards for locomotives, marine engines, lawn and garden engines and large diesel engines. EPA has included an incentive program to encourage ships entering and exiting the ports to use a lower impact route. EPA is also requiring airlines to use very clean technologies for their ground service equipment and their auxiliary power units, as in all FIP areas. Finally, EPA is including a fleet average program for locomotives in the South Coast.

Some commenters urged that the FIP also include TCMs, which could reduce vehicle trips and VMT, and thus speed attainment. EPA was urged to undertake an analysis of the full range of programs described in section 108(f), and then select the most promising for implementation. In particular, several commenters supported a user fee to provide the incentive for reduced vehicle use and a scrappage program to remove the most polluting vehicles from the inventory. Other commenters supported fee programs in concept but opposed inclusion of fee programs in the FIP because, under Federal law, revenues would go to the U.S. Treasury, rather than remain in the area for such uses as transit rebates, elimination of regressive impacts, etc. Most comments on fees, however, emphasized the unacceptable impacts of significant new fees on the area's economic competitiveness. Supporters of scrappage failed to identify a funding source to allow EPA to purchase vehicles or administer a scrappage program.

EPA remains encouraged by the potential for State and local

implementation of user fees and scrappage to accelerate progress and ensure realization of the full benefits of the new generation of extremely clean vehicles. CARB's 1994 SIP, in fact, includes such measures. As discussed in Section III.A.3., EPA continues to believe that the restrictions in the Miscellaneous Receipts Act make Federal implementation of these programs far less attractive. The State, on the contrary, can establish authority to reassign user fees to mitigate the economic consequences of a fee program, provide transportation alternatives, or generate revenues for a scrappage program.

Commenters questioned whether the FIP showed expeditious attainment and argued that additional measures should be developed to bring about attainment of the ozone NAAQS in the South Coast earlier than 2010. EPA is not aware at this time of measures that EPA could readily add to the FIP to advance attainment. EPA will continue to give the highest priority to working with SCAQMD and CARB in the development, adoption, and implementation of SIP measures that will provide for expeditious progress and attainment.

d. Section 182(e)(5) provisions.

(1) Statutory requirements.

The 1990 Amendments to the Act added section 182(e)(5), which authorizes the South Coast (as the only "Extreme" ozone area) to use as yet unadopted measures for its ozone attainment demonstration, if these measures anticipate new or improved technology or control techniques and the measures are not needed

to meet the first 10 years of progress requirements. The Act requires that a commitment to adopt contingency measures be submitted as a SIP revision no later than 3 years before scheduled implementation of the new technology measures. EPA's General Preamble indicated that the SIP should show that the new-technology measures could not be fully adopted by the submittal date, the SIP should include a schedule leading to full adoption of the measures, and the responsible entities should submit appropriate commitments (57 FR 13524, April 16, 1992). See the extensive discussion in Section III.B.5.d. of the proposed FIP.

(2) Amendments to EPA's new-technology measures.

In Section III.F., EPA summarizes and responds to public comments on the proposed FIP new-technology measures. In the same section, all adjustments to the new-technology measures are delineated. The final FIP new-technology measures are vastly diminished in scope, as a result of the revised VOC and NOx carrying capacities for the South Coast ozone attainment demonstration and the interim final SIP approval of the CARB and SCAQMD new-technology measures.

e. Attainment demonstration.

As discussed in Section III.G. of this preamble, EPA believes that the set of measures contained in the FIP along with the approved State and local measures are sufficient to bring the South Coast Basin into ozone attainment by November 15, 2010. This projection is based on extensive computer simulations of ozone formation using the UAM for five separate episodes.

6. South Coast CO FIP

a. Reduction requirements.

The final CO FIP reduction requirements are based on the updated inventory and reduction requirements recently adopted by SCAQMD and CARB in their 1994 SIP submittals. EPA's use of the 1994 South Coast AQMP's updated inventories and attainment target in the final FIP is consistent with numerous comments received. The South Coast Air Basin CO inventory includes 1990 estimates of 7990 tpd and a year 2000 inventory estimate of 5301 tpd. These inventories are substantially greater than the previous estimates because the 1994 AQMP uses the higher motor vehicle emission factors embodied in EMFAC7F, new VMT projections, and increased nonroad engine emissions estimates. The attainment year inventory reflects reductions from all previously adopted measures.

Modeling analyses performed by the SCAQMD indicate that attainment of the CO NAAQS will require that the emissions inventory be reduced to 4835 tpd. This carrying capacity is higher than used in the 1992 SIP because of the adjustments to the inventories referenced above.

Based on the revised inventory, CO emissions in the South Coast Air Basin must be reduced from the 1990 inventory by 39 percent. Compared to the projected 2000 inventory, CO emissions must be reduced by 9 percent.

b. Enhanced I/M.

The final FIP continues to rely on a single strategy to fill

the single gap in the South Coast CO SIP and achieve the emissions reductions needed for attainment. The enhanced I/M rules promulgated today, or enhanced I/M rules submitted in the future by the State, eliminate the shortfall in the SIP's attainment demonstration.

It should be noted that EPA's current FIP obligation is to fulfill the requirement to demonstrate attainment, not any failure that might have arisen under any of the various requirements of the new law. Therefore, EPA is not here addressing specifically any of the CO SIP issues raised in the partial disapproval of the South Coast CO SIP.

c. Attainment demonstration.

As discussed in the proposal, the FIP attainment demonstration is based on SCAQMD modeling analyses included in the AQMP submittal. The SCAQMD analysis included both an areawide analysis to determine the regional CO levels and a "hot-spot" component to determine the CO concentration at four heavily traveled intersections.

The areawide analysis was conducted using the Urban Airshed Model, according to the "Guidance for Application of Urban Areawide Models for CO Attainment Demonstration". The projected peak 8-hour carbon monoxide concentration for projected year 2000 emissions with proposed controls (4405 tpd) was 9.0 ppm. The maximum projected 8-hour average at an intersection (the Lynwood site) was 8.1 ppm.

The "hot-spot" analysis was performed for four intersections

(Lynwood, Hollywood, Westwood and Inglewood), using CAL3QHC and base case as well as worst case meteorological data. Projected peak "hot-spot" concentrations under base case meteorology were 1.1 ppm at Lynwood and Inglewood and 1.7 ppm in Westwood and Hollywood.

The combined areawide analysis and "hot-spot" analysis concentration demonstrate compliance with the 8-hour carbon monoxide standard at the Westwood, Hollywood and Inglewood intersections. The Lynwood regional and peak "hot-spot" concentrations individually comply with the 8-hour carbon monoxide standard. The concentrations were not aggregated, based on the conclusions of a 1991 study of the carbon monoxide in the Lynwood area. This study determined that the projected maximum "hot-spot" concentrations were at a different time of day from the maximum areawide peak concentration.

Attainment of the 8-hour carbon monoxide standard is demonstrated for the year 2000 with the already adopted CARB and SCAQMD controls, supplemented by the Federal enhanced I/M rule (40 CFR 52.2963).

C. Stationary and area source rules.

As discussed in the proposed FIP at 59 FR 23305, the proposed stationary and area source FIP measures fall into the following categories:

- i. Source-specific RACT rules, such as rules for Formica Corporation and Sierra Pine Limited.
- ii. Regulations for specific source categories in the FIP

areas, such as a municipal waste landfill rule for Sacramento, and a service station measure for all three areas.

- iii. Statewide area source measures, including the measures for consumer products and pesticides.
- iv. Cap regulations for achieving annual reductions from stationary sources.
- v. New-technology measures for South Coast pursuant to section 182(e) (5) of the CAA.

EPA generally received relatively little public comment on the proposed source specific RACT measures, the regulations for specific source categories in the FIP areas, and the new-technology measures. While still less than the comments received on most proposed mobile source measures, EPA received more extensive comments on the stationary source statewide and cap measures. All major comments on specific measures are discussed in Sections III.B.5.d and III.C.1-4. Several overarching stationary source comments are discussed briefly below.

EPA proposed five-year record maintenance for most stationary and area source FIP measures in order to assure ongoing compliance. EPA has reduced record maintenance requirements to three years in order to be consistent with the Office of Management and Budget's general information collection guidelines. This does not affect any longer record maintenance requirements found under Title V of the Clean Air Act or elsewhere.

Several commenters suggested that stationary sources have already greatly reduced emissions, and that the FIP should focus more on mobile source emission controls. EPA concurs that many stationary sources have dramatically reduced emissions, but further reductions are needed from all significant source categories to attain the ozone standard in California.

The State of California and other commenters requested that EPA delay implementation on the FIP measures to allow additional time for development and approval of replacement SIP measures. EPA has established February 14, 1997, as the effective date for the FIP measures promulgated today; and May 15, 1997 as the implementation date for many of the stationary source measures. This two-year period before the FIP becomes effective will not interfere with the FIPs' attainment demonstrations, but will allow the State an opportunity to replace the FIPs before the Federal regulations are implemented.

Several commenters asserted that emission reduction credits for the FIP stationary source measures should be discounted to reflect underestimates in the inventory, upset conditions, noncompliance, etc. EPA concurs, and has discounted expected stationary source emission reductions by 20%, consistent with EPA policy on rule effectiveness.

EPA has finalized modified versions of most of the proposed stationary and area source measures. We continue to believe, however, that all these measures can be replaced by State and local SIP rules. In a few cases, equivalent SIP measures have

already been submitted and, as a result, EPA has not finalized proposed measures for Formica Corporation, Bakeries, and Consumer Products. EPA has also not finalized the proposed stationary source VOC cap programs in Sacramento and Ventura and the NOx cap program in Ventura, partly as a result of the inventory and modeling information provided by California in the November 1994 SIP submittal. EPA intends to work closely with the State and local agencies to accelerate the adoption and approval of complete substitute SIPs that will allow EPA to withdraw the remaining FIP controls as soon as possible.

1. Regulations for Specific Sources

a. Formica Corporation (40 CFR 52.2961(p)).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23306, EPA proposed a reasonably available control technology (RACT) rule for Formica Corporation (Formica), located in Placer County in the Sacramento ozone nonattainment area. The proposal set VOC emission limits for the facility's phenolic and melamine resins, specified the test methods used for compliance and provided for alternative compliance with control equipment. EPA is not finalizing its proposed FIP rule for Formica because, since the FIP proposal, the Placer County Air Pollution Control District (PCAPCD) has adopted and submitted to EPA Rule 230, Plastic Products and Materials-Paper Treating Operations, which has been approved into the SIP. This SIP approval fully substitutes for the proposed FIP rule for Formica.

(2) Summary of major comments and responses. EPA received

several comments from Formica. Formica's comments were considered by PCAPCD in developing Rule 230.

(3) Other rulemaking. Since the FIP proposal, PCAPCD has adopted and submitted to EPA Rule 230 Plastic Products and Materials-Paper Treating Operations which incorporates the above comments from Formica. EPA has approved PCAPCD's Rule 230 (59 FR 64336, December 14, 1994) and will not be finalizing Formica's RACT rule in the FIP. PCAPCD's Rule 230 achieves the same emissions reductions as EPA's proposed RACT rule for Formica, and thus, does not jeopardize the FIP's attainment demonstration.

b. SierraPine Limited (40 CFR 52.2961(q)).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23306, EPA proposed a RACT rule for SierraPine Limited (SierraPine), located in Placer County in the Sacramento ozone nonattainment area. The proposal required a 90 percent reduction of uncontrolled VOCs from the facility's press vents and a 95 percent reduction of uncontrolled VOCs from the facility's wood dryers by January 1, 1996. EPA is finalizing the proposed FIP rule for SierraPine but with revised compliance dates.

(2) Summary of major comments and responses. The main commenter was SierraPine. The following is a summary of the main comments and EPA's responses.

EPA has amended the implementation dates of the proposed FIP rules to allow the State adequate time for full SIP approval and FIP replacement before FIP implementation, as discussed in Section III.C. This change revises the initial implementation

date for some requirements to May 15, 1997.

SierraPine commented that it is in the process of installing control equipment for PM-10 which may also have significant emissions reductions benefit for the facility's VOCs and that these emissions reductions should be taken into account in determining RACT for the facility.

As a general rule, EPA considers an 80 percent reduction of uncontrolled emissions to be the default RACT value in cases where RACT has not been determined for a similar source. Case-by-case analysis can be used to ultimately determine the appropriate RACT reduction. SierraPine's preliminary calculations estimate that the PM-10 controls may reduce VOCs by 57 percent or more. The actual VOC emission reductions will be determined by source tests which are not expected to be completed until after EPA's court ordered deadline for promulgation of the FIP. EPA considered the effects and benefits of the PM-10 controls in its FIP proposal and will re-examine the FIP requirements once the source test results are available. The technical support document prepared by Woodward-Clyde Consultants for SierraPine indicates, that even after credit for reductions from PM10 controls, an additional 97 tpd could be controlled using additional VOC controls at a cost of approximately \$3,000 per ton. Because of the uncertainty over the effectiveness of the PM10 controls in reducing VOCs and because VOC reducing control equipment is available which can complement the PM10 controls, EPA believes that the FIP rule requirements are cost effective.

SierraPine commented that the RACT analysis should consider control requirements at other medium density fiberboard plants. EPA did consider similar facilities in developing its proposed RACT determination and, as SierraPine points out in its comments, found that there were no such facilities with control requirements for VOCs. However, as SierraPine also points out, there are also no other such facilities in ozone nonattainment areas. EPA does not believe that it makes sense to base this facility's control strategy determination only on what sources in ozone attainment areas are required to do.

SierraPine commented that, while installation of a regenerative thermal oxidizer (RTO) would meet the proposed FIP's rule requirements, it is not cost effective when the VOC benefits from the above mentioned PM-10 controls are taken into account. RTO should not be considered as VOC RACT for its facility.

EPA agrees that RTO may not be a feasible option in combination with the PM10 controls; however, EPA believes, as described above, that there are options other than installation of a RTO for complying with the FIP requirements. The RTO option was presented in EPA's original TSD because, at the time of the FIP proposal, SierraPine had not begun installation of the PM10 controls.

(3) Other rulemaking. The PCAPCD has adopted and submitted to EPA Rule 229, Fiberboard Manufacturing, as representing RACT for SierraPine Limited. Based on a preliminary review of this rule and its supporting documentation, the rule does not

sufficiently demonstrate RACT requirements have been met. EPA does not believe that the less stringent limits (50% VOC reduction from the wood fiber dryers and 57% reduction from the press vents) in Rule 229 have been adequately justified. EPA will continue to work with the District to resolve the emissions reductions and stringency issues.

c. Sierra Pacific Industries. (40 CFR 52.2961(r)).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23307, EPA proposed a RACT rule for Michigan-California Lumber Company (Michigan-California), located in El Dorado County in the Sacramento ozone nonattainment area. The rule proposes that the facility's spreader-stoker boiler meet an emission limit of 150 parts per million by volume (ppmv) of VOCs in the stack exhaust stream of the boiler. EPA is finalizing the proposed rule for this facility.

(2) Summary of major comments and responses. Since the FIP proposal, ownership of the facility has changed from Michigan-California to Sierra Pacific Industries (Sierra Pacific). In the final rule, EPA is making changes to reflect the new ownership of the facility. In the final rule, EPA will also clarify the implementation date of the rule to be May 15, 1997.

Sierra Pacific commented that the proposed VOC limit of 150 ppmv is achievable with a reasonable limit for NOx. EPA understands that as the VOC concentrations are reduced from the facility's #3 boiler, the NOx emissions can increase. However, EPA believes that there are methods for meeting the NOx limits in

the FIP while meeting the VOC limit. These methods are addressed in the Section III.C.2.n. of this preamble.

Sierra Pacific provided several comments about the goals of the proposed FIP and how their facility supports and helps EPA to meet these goals. EPA appreciates these comments and hopes that Sierra Pacific will continue to work with the local air agency to reduce emissions from its facility.

(3) Other rulemaking. The El Dorado County APCD is planning to adopt a VOC RACT rule for Sierra Pacific by February 1995. EPA will continue to encourage and support this rule development and adoption, in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

d. Reynolds Metals Company (40 CFR 52.2961(s)).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23307, EPA proposed a RACT rule for the tab lubricating process at Reynolds Metals Company (Reynolds), located in Placer County in the Sacramento ozone nonattainment area. Emissions reductions have been achieved due to past reformulations and improvements in the application rate of the tab lubricant, and the proposed rule requires Reynolds to meet these limits. EPA is finalizing the proposed rule for Reynolds.

(2) Summary of major comments and responses. No significant comments were submitted to EPA.

In the final rule, EPA will clarify the implementation date of the rule to be May 15, 1997.

(3) Other rulemaking. On October 6, 1994, Placer County APCD adopted several amendments to their Rule 223 Can Coating, which is now entitled Metal Container Coatings. These amendments included a VOC content requirement for tab lubricants which was proposed by the FIP's RACT rule for Reynolds Metals. On January 10, 1995, EPA published a notice of proposed rulemaking approving Rule 223 (60 FR 2563). EPA does not anticipate any adverse comments and plans to replace the FIP rule with SIP approval before the FIP rule is scheduled for implementation.

2. Regulations for Specific Source Categories in the FIP Areas

a. Solvent Cleaning Operations (52.2961(a) - Sacramento, Ventura).

(1) Summary of proposed rule. EPA proposed to reduce VOC emissions from solvent cleaning operations in the Sacramento and Ventura nonattainment areas by:

(i) Limiting the VOC content and vapor pressure of solvents used;

(ii) Allowing the use of add-on control equipment in lieu of meeting the VOC and vapor pressure limits; and

(iii) Prescribing procedures and requirements for solvent cleaning operations.

(2) Summary of major comments, responses, and changes to the measure. EPA received relatively little public comment on the proposed measure.

Three commenters claimed that only one product is available

that meets the 70 gram-per-liter VOC limit and that it is unsuitable for their needs. In response, EPA has modified 40 CFR 52.2961(a)(3)(i)(A) to allow use of solvents with VOC contents up to 200 g/l and composite partial vapor pressures up to 25 mm Hg at 20°C.

One commenter suggested clarifying changes to the proposed definition of "closed container." EPA concurs, and has revised the definition in 40 CFR 52.2961(a)(2).

EPA has also amended the implementation schedule and shortened record retention requirements as discussed in Section III.C.

(3) Future rulemaking. The Yolo-Solano, Ventura, Sacramento, and El Dorado Air Pollution Control Districts plan to adopt parallel local rules in the near future. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

(b) Wood Products Coatings (52.2961(b) - Sacramento, Ventura)

(1) Summary of proposed rule. EPA proposed to require wood coating operations either to use low-VOC wood coating products, or to install 85 percent efficient add-on control equipment.

(2) Summary of major comments, responses, and changes to the measure. EPA received relatively little public comment on the proposed measure.

Several commenters claimed that compliant products are not yet widely available to meet VOC limits proposed for January 1996, and recommended delaying this deadline for six months, consistent with rule development plans at the State and local level. EPA has modified the compliance schedule.

Commenters argued that water-borne coatings are not available to effectively refinish wood items previously finished with oils. Commenters recommended raising VOC limits for refinishing operations proposed effective July 1996. EPA concurs with this recommendation and has modified 40 CFR 52.2961(b)(3)(i) appropriately.

One commenter suggested that EPA allow the use of strippers with a vapor pressure of less than 2 mm Hg without limiting VOC content. EPA concurs that these low vapor pressure products should not contribute significant VOC emissions, and has modified 40 CFR 52.2961(b)(3)(i) appropriately.

EPA has also shortened record retention requirements as discussed in Section III.C.

(3) Future rulemaking. The Ventura County Air Pollution Control District adopted rule 74.30, Wood Products Coatings, on May 17, 1994. This rule was submitted to EPA on July 13, 1994 and appears, on preliminary review, to be substantively equivalent to the FIP measure. If rule 74.30 is approved into the federally enforceable SIP, EPA expects to modify 52.2961(b) to no longer apply in Ventura. The Sacramento area districts are also developing local rules for wood products coatings. EPA will

continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

c. Automotive refinishing operations (40 CFR 52.2961(c) - Sacramento).

(1) Summary of proposed rule. As described at 59 FR 23309, EPA proposed to require automotive refinishing operations either to use low-VOC coating products or to install 85 percent efficient add-on control equipment. The requirements relied heavily on technical support performed by SCAQMD in developing District Rule 1151.

(2) Summary of major comments, responses, and changes to the measure. EPA received relatively little public comment on the proposed measure.

Several commenters noted that SCAQMD has initiated revisions to rule 1151 because technology-forcing standards within the rule appear unattainable by the existing implementation date of January 1996. EPA concurs that the status of coating technology justifies modifying the FIP proposal to parallel rule development at SCAQMD, CARB's BARCT workgroup, and elsewhere. Specifically, EPA has:

(i) Revised VOC limits and extended the compliance date from January 1, 1996 to May 15, 1997;

(ii) Removed precoat and Group I extreme performance topcoat

categories; and

(iii) Removed acrylic enamel, polyurethane enamel, alkyd enamel and lacquer topcoat categories.

One commenter requested that EPA reconsider transfer efficiency as a measurable source of VOC reduction. EPA concurs that improving transfer efficiency can reduce emissions, but EPA does not have adequate information at this time to formulate a credit structure.

One commenter stated that if EPA requires businesses to pay for the increased cost of conforming to these regulations, EPA should also require the auto insurance industry to allow for this cost in claim settlements. However, EPA is not a party to the business relationship between the insurer and the insured and has not modified the FIP measure in this regard.

EPA has also delayed implementation and shortened record retention requirements as discussed in Section III.C.

(3) Future rulemaking. The Yolo-Solano and El Dorado Air Pollution Control Districts (APCDs) adopted analogous local measures in April 1994 and September 1994 respectively. The Sacramento and Placer APCDs also plan to develop parallel local rules in the near future. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

d. Adhesives and Sealants (40 CFR 52.2961(d) - Sacramento).

(1) Summary of proposed rule. As described at 59 FR 23309, EPA proposed to require industrial and commercial facilities either to use low-VOC adhesives and sealants or to install 85 percent efficient add-on control equipment.

(2) Summary of major comments, responses, and changes to the measure. EPA received relatively little public comment on the proposed measure.

A commenter stated the proposed FIP rule does not adequately define small users and suggested that all emission sources below 200 pounds of coating per year be exempt. EPA does not agree with the commenter's suggestion. A partial recordkeeping exemption is clearly elucidated in 40 CFR 52.2961(d)(5). An exemption of this magnitude would have a substantial negative impact on the potential of this rule to achieve the emission reductions necessary to bring the Sacramento area into attainment with the NAAQS.

A commenter requested that EPA allow the use of product formulation data in determining the VOC content of adhesives and sealants for labeling purposes. EPA has not made this modification, as it would unfairly shift the burden of VOC content testing from product manufacturers to product users.

A commenter suggested replacing the definition of "organic compound" with the standard definitions of "VOC" and "exempt compound". EPA agrees that this clarifies the measure, and has modified 40 CFR 52.2961(d)(2) consistent with 40 CFR 51.100.

A commenter requested that the FIP contain calculations for

both "grams of VOC per liter of material" and "grams of VOC per liter of coating". In response, EPA has added these calculations to the final rule, along with provisions describing when each calculation method shall be used. To improve clarity, the calculation formerly titled "grams of VOC per liter of material" has been relabeled as "grams of VOC per liter--Low Solids".

A commenter requested that two additional equations be cited in 40 CFR 52.2961(d)(6)(ii)(B), *Destruction or removal efficiency*, in order to refine the calculation methods for "VOC mass emission rate" and "capture efficiency". EPA agrees that these equations clarify the requirements, and has modified the calculation method appropriately.

(3) Future rulemaking. The Yolo-Solano Air Pollution Control District (APCD) adopted an analogous local measure on September 14, 1994. The Sacramento, Placer, and El Dorado APCDs also plan to develop parallel local rules in the near future. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

e. Can and Coil Coating (40 CFR 52.2961(e) - Sacramento).

(1) Summary of proposal. As described at 59 FR 23309, EPA proposed controls for can and coil coating operations in the Sacramento nonattainment area. Similar SIP measures control can and coil coating in Sacramento and Placer counties, and no can

and coil emissions were projected to occur in El Dorado or Sutter. EPA proposed 52.2961(e), therefore, to reduce can and coil coating emissions in Yolo and Solano counties.

(2) Summary of major comments, responses and changes to the measure. EPA used CARB emission inventory data to estimate 1990 can and coil coating emissions in Yolo and Solano at 0.34 tpd of VOC. This estimate was derived by disaggregating national can and coil emissions by population. EPA received comment from the Yolo-Solano Air Pollution Control District, however, that no can and coil facilities exist within the District's jurisdiction. There is no need for this FIP measure, therefore, and EPA is not finalizing any requirements at 40 CFR 52.2961(e).

f. Commercial bakeries (40 CFR 52.2961(f) - Sacramento).

(1) Summary of proposal. As described in the FIP proposal at 59 FR 23310, EPA proposed to require 95 percent efficient air pollution control equipment on ovens at large bakeries in the Sacramento area. EPA identified three facilities which would be subject to this measure, all of which are located within Sacramento County, and are under the jurisdiction of SMAQMD.

(2) Subsequent rulemaking. On June 7, 1994, SMAQMD adopted rule 458, "Large Commercial Bread Bakeries." While details of the SIP and FIP measures differ, the two rules require the same air pollution control efficiency of the same three bakeries, and should achieve equivalent emission reductions. On January 30, 1995 (60 FR 5581), EPA promulgated approval of rule 458 into the

federally enforceable SIP. EPA is not, therefore, promulgating the FIP measure proposed for commercial bakeries.

(2) Summary of major comments and responses. Significant comments were submitted by SMAQMD and the American Bakers Association (ABA). SMAQMD's comments generally requested greater consistency in details of the SIP and FIP measures. ABA requested a relaxation in the reduction requirement and modifications to a test method. Because EPA is not finalizing a Federal measure, there is no need to respond to these comments.

g. Municipal Waste Landfills (40 CFR 52.2961 (g) - Sacramento).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23310, EPA proposed requiring municipal waste landfills which have received at least 500,000 tons of waste to reduce emission of gases generated by waste decomposition. These requirements would apply in the Sacramento area, and would have to be met by July 1, 1997.

(2) Summary of major comments, responses, and changes to the measure. SMAQMD commented that setting targets for the volume of collectable landfill gas is unnecessary, and that the surface testing procedure described by CARB/CAPCOA³² achieves adequate landfill gas control. EPA continues to believe, however, that collection targets will help ensure proper operation and maintenance of the gas collection system.

³² "Suggested Control Measures for Landfill Gas Emissions," California Air Resources Board and California Air Pollution Control Officer's Association, September 13, 1990.

Precedence in California for this approach was established by the Ventura County Air Pollution Control District. A minor modification in the final rule has been made in order to clarify the requirements for determining the quarterly gas collection targets. EPA may reevaluate this requirement after New Source Performance Standards (NSPS) for landfills are finalized.

SMAQMD also suggested that gas collection systems may not be cost effective for large landfills with low concentrations of refuse, although cost data was not provided. The District noted that it may exempt sources from an analogous SIP rule currently under development based not only on the total mass of waste received, but also on the amount of waste received per square foot. EPA is receptive to this and other SIP strategies submitted by SMAQMD and the other Sacramento area districts to replace the FIP. EPA is finalizing the exemption scheme of the proposed FIP, however, as it is technically sound and has precedence in California. EPA is similarly finalizing the rest of the municipal solid waste landfill regulation without significant change from the proposal.

EPA has also shortened record retention requirements as discussed in Section III.C., and has also modified paragraph (g) (3) (i) (H) (2) to require best engineering practices in calculating the gas collection system's area of influence, rather than referencing the methods of the proposed "Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills".

(3) Future rulemaking. On May 30, 1991 (56 FR 24468), EPA proposed "Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills." EPA currently plans to finalize a national NSPS for landfills by mid-1995. At that time, EPA may modify the FIP landfill measure for consistency with the national standards. In addition, SMAQMD and other affected districts are currently developing SIP measures for landfills. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

h. Livestock Waste (40 CFR 51.2961(h)).

(1) Summary of proposal. As described at in the proposed FIP at 59 FR 23310, EPA proposed that VOC emissions generated from livestock wastes be reduced from dairy operations consisting of 400 head or greater. Emission reductions were expected by requiring waste management practices which would reduce emissions occurring during the wet and dry storage of livestock wastes. Approximately 55 percent of all waste would be processed through a covered lagoon, anaerobic digester, or equivalent method. The remaining waste would be stored in windrows and periodically turned to enhance aerobic decomposition.

(2) Summary of major comments, responses and changes to the measure. EPA received testimony and/or comment letters from

several parties, including the California dairy associations and local air pollution control agencies. Because of the length of the comments and issues raised, only a summary of the comments, responses, and changes are provided below. Based on the comments received and issues raised, EPA is not finalizing its proposal at this time.

Several commenters indicated the need for better emission inventory information. EPA acknowledged in the FIP proposal that the VOC emission factors used for the dairy industry should be verified and/or updated. Although the FIP proposal was based on the best information available at the time of proposal, data on species and rate of VOC emissions from dairies was limited. To get some answers to these questions, EPA funded a preliminary testing program aimed at collecting VOC samples from a small number of representative dairies. Preliminary sampling was recently completed at two dairies in Sacramento County. Although not enough samples were taken to draw a definitive conclusion, the preliminary results from the sampling indicate that VOC emissions from dairies may have previously been overestimated. EPA plans to undertake a similar sampling effort in the South Coast area during 1995. Based on this preliminary testing, EPA believes additional information is needed to better understand how much and where within the dairies the emissions are occurring.

Commenters indicated that the proposed windrowing provision would require that dairy operators purchase additional land or

take crop land out of production. In addition, a commenter indicated that windrowing at a dairy would be a violation of the land use permit. EPA believes that the proposal allows dairy operators to determine the best option for meeting the proposed requirement. For example, where windrowing is not feasible, a dairy operator can arrange to have the waste removed on a periodic basis. One commenter representing the dairy association in Southern California indicated that they are working with Biorecycling Technologies, Inc. (BTI) to help address waste management issues. BTI's proposed project in the Chino area encompasses many of the same concepts (e.g., periodic removal of wastes and anaerobic digestion) in the FIP proposal and offers dairy operators a potential alternative method for complying with the proposed FIP. In addition, BTI's proposed project will help address other waste management issues, such as water quality impacts. EPA encourages the dairy industry, the SCAQMD and BTI to continue to work together for possible methods to reduce air emissions.

Many commenters indicated that covered lagoons/storage ponds or anaerobic digesters may not be feasible for the dairy practices found in the FIP areas. Although technologies for biogas recovery systems represent a viable, demonstrated technology, some systems installed during the 1980s failed because of improper design or other factors. As a result, this technology has been discounted by some as unworkable; however, biogas recovery technology has improved with time. EPA believes

that this technology represents an available option for reducing emissions and should continue to be studied for its potential application in the FIP areas. In addition, the proposed FIP measure allows dairy operators to use alternative methods for achieving reductions. As previously mentioned, the BTI project offers dairy operators a potential alternative for meeting the proposed FIP requirements. EPA will continue efforts to further study and resolve issues surrounding the feasibility of biogas recovery systems as a means to reduce VOC emissions.

Although some commenters indicated that the proposed FIP regulation will result in industry leaving the FIP areas, information supporting this claim was not provided to EPA. It was not the intention of EPA that the proposed regulation result in the loss of business. If and when a dairy decides to leave, environmental regulation may be one of many elements which factor into that decision. Because EPA is not finalizing the FIP rule at this time, additional time is available to better estimate and, if necessary, mitigate the potential impacts of a measure requiring reductions from dairies.

SMAQMD commented that they did not support the proposed FIP measure at this time. In addition, based on latest estimates, the number of dairy cows in the Sacramento area has declined by roughly 30 percent since 1990. Also, a 1990 population estimate by the United States Department of Agriculture is less than the estimate used in EPA's Technical Support Document. Based on this new information and the issues described above, EPA is not,

finalizing the proposed measure for the Sacramento FIP area at this time.

The SCAQMD adopted as part of their AQMP a commitment to adopt a measure to reduce emissions from livestock wastes. The measure, currently scheduled for adoption in 1995, will address VOC, PM10, and ammonia emissions. EPA intends to continue to work with the SCAQMD and the dairy association to resolve issues raised as a result of the proposed FIP measure. Based on the comments received and issues raised, EPA is not finalizing the livestock waste measure in the South Coast at this time. EPA believes that it will be more efficient to focus its efforts on assisting the SCAQMD with their rule development process, which will also address PM10 and ammonia. If adequate progress is not made by the SCAQMD, EPA may propose a revised FIP rule at a later date. The FIP reductions associated with the proposed measure have temporarily been shifted into EPA's new-technology measures for the South Coast, as described in Section III.F.

(i) Fugitive Emissions (40 CFR 52.2961(t) and 40 CFR 52.2961(i) - Sacramento, South Coast, Ventura).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23311 and 23312, EPA proposed two separate rules to reduce VOC leaks from the petroleum and gas industry. 40 CFR 52.2961(t) regulates components at oil and gas production facilities and conveying stations, while 40 CFR 52.2961(i) covers components at gas processing plants, refineries, bulk plants and

terminals, and chemical plants. Both rules were modelled after existing district rules and CARB RACT guidance, and have similar requirements that establish a leak detection and repair program.

(2) Summary of major comments, responses and changes to the measure. EPA received testimony and/or comment letters from numerous parties, including the petroleum and natural gas industry, petroleum associations and local air pollution control agencies. Because of the length of the comments and issues raised, only a summary of the comments, responses, and changes are provided below. Readers should refer to the supplement to Technical Support Document found in the docket for a more detailed discussion of comments, responses, and changes. Based on comments received and issues raised, EPA is finalizing the proposed FIP rule with some modifications.

EPA has amended the initial implementation dates as discussed in Section III.B.1.c. This change revises the initial implementation date for some requirements to May 15, 1997.

Several commenters suggested that the fugitive rule for oil and gas production facilities be deleted because the proposed FIP measure would unfairly burden the oil and gas industry which is already heavily regulated. EPA estimated that fugitive VOC leaks from oil and gas production in the FIP areas contribute enough emissions that these operations should be included in the FIP. EPA does not believe that the proposed rule presents unreasonable requirements given that most of the requirements are already in effect in other nonattainment areas and/or follow CARB guidance

for fugitive emissions.

Many commenters noted that the proposed 500 ppm leak definition in 40 CFR 52.2961(i) has not been demonstrated to be cost-effective, and decreasing the leak definition concentration from 1,000 ppm to 500 ppm is not justified in terms of emission reduction potential. Also, the Bay Area leak definition, upon which the 500 ppm concentration was based, referenced a measurement taken at a distance of one centimeter from the component, which would allow for significant dilution compared to a reading taken in accordance with EPA Method 21.³³

EPA partially concurs with this concern and has revised the leak definition to set a 1997 implementation date for the 500 ppm provision for South Coast sources not already subject to other applicable Federal requirements (i.e., Maximum Achievable Control Technology standards for hazardous air pollutants). In addition, the 500 ppm limit will only apply to sources in the South Coast FIP area. EPA estimates that revising the leak limit from 500 to 1000 ppm would have a minor impact in the Ventura and Sacramento areas since few emission sources in these areas would be affected; however, increasing the limit to 1000 ppm would result in a loss of an estimated 3 tpd VOC in the South Coast. Because of the significant VOC reductions needed to bring the South Coast area into attainment, EPA believes that the 500 ppm limit is

³³ The BAAQMD rule referenced in the commenter's letter contains a future effective limit of 100 ppm. Even if the limits were based on a measurement taken at one centimeter, it can still be argued that the 500 ppm FIP limit is less restrictive than the 100 ppm BAAQMD limit.

reasonable and necessary.

Several commenters asked that component identification requirements be revised to allow for operator flexibility. In particular, a tabulated inventory for minor components was requested as an option to Piping and Instrumentation flow diagrams. EPA concurs and the identification provision has been revised to allow for a tabulated component inventory.

Several comments were received regarding the leak threshold table. One commenter noted that the threshold values were established using major gas leak data and therefore should not apply to minor gas leaks. The rules have been clarified to reflect this intention. Also, comments were received regarding the conditions for decreasing the inspection frequency from quarterly to annual. One commenter requested that the conditions for decreasing inspection frequency and the conditions for reverting back to quarterly inspections be made identical for clarity purposes. Another commenter claimed that the conditions for decreasing the inspection frequency were too stringent in that a single pressure relief event could disqualify the facility for annual inspections for all other types of components. The rule language has been revised to accommodate these concerns. Leaks from pump seals, compressor seals, PRVs, and stuffing boxes will not be included against the condition for decreasing inspection frequency since these components are not allowed to have decreased inspection frequency.

One commenter expressed concern that the exemptions proposed

in 40 CFR 52.2961(t) related to API gravity were too broad. A common fugitive emission source that would be exempted under these provisions is tank hatches. EPA concurs with this comment and the exemptions will be limited to the inspection requirements.

Many commenters claimed that the inventory estimates for fugitive emissions from the petroleum industry have been significantly overestimated. EPA was encouraged to revisit the original emissions estimates, adjust the emission contributions from the FIP areas, and reevaluate the cost-effectiveness of the proposed fugitive measures. EPA believes that the inventory estimates used in the FIP should be consistent to the maximum extent possible with those developed by the State and local agencies in the FIP areas. EPA acknowledges the possibility that the fugitive emission estimates for some components may be revised in the future but that the estimates remain the source of considerable discussion among regulators and industry. EPA will continue to work with the districts and the industry to resolve this issue and make revisions or adjustment as needed.

Commenters from the natural gas utility industry asked to be exempted from the FIP rules because they are already reducing emissions through EPA's voluntary Natural Gas Star program. In addition, the commenters provided data which reflected that EPA's inventory and reduction estimates were overestimated. Based on the evidence provided and the replacement schedule established under the Natural Gas Star program, EPA has revised the FIP rule

to exempt gas distribution components handling post-processed natural gas. In addition, EPA is not claiming credit at this time for the utility industry's voluntary changeout of the high bleed valves. Upon completion of the changeouts and further analysis of the reductions, EPA will reevaluate the possible reductions which may be creditable in the FIP.

EPA is also clarifying the exemption for components handling a VOC concentration less than 10 percent by weight or less, which was based upon the exemption listed in the CARB RACT guidance document. The 10 percent VOC concentration was intended to include ethane as in the current district rules and CARB's guidance. To maintain consistency between FIP and future replacement SIP measures, the language has been clarified to reflect the original intent. As a result, EPA has corrected the exemption to read "VOC concentration, including ethane, of 10 percent by weight or less." EPA considers this change to be minor and does not believe that this correction will have a negative impact on any sources affected by the FIP rule.

(3) Future rulemaking. Many of the FIP area districts have committed to adopt and/or revise their fugitive emission regulation. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

j. Gasoline Transfer and Dispensing (40 CFR 52.2961(j) - Sacramento, South Coast, Ventura).

(1) Summary of proposal. As described in the Proposed FIP at 59 FR 23312, EPA proposed to reduce VOC emissions from gasoline service stations in the FIP areas by improving existing vapor recovery systems and phasing out older, less efficient system components. Required improvements to phase I systems include pressure-vacuum relief valves on stationary tank open vent pipes, coaxial system restrictions, and CARB certified spill boxes. Phase II requirements include internal vapor check valves for balance system nozzles, proper tubing between the riser and dispenser cabinet, certified insertion interlock mechanisms for bellows-equipped nozzles, and phase-out of dual hose systems. In order to minimize the cost impacts of this measure, most of the required improvements are to be made during regularly scheduled maintenance.

(2) Summary of major comments, responses and changes to the measure. EPA is finalizing the proposed FIP rule with some modifications. A detailed description of the changes is provided in the supplement to the Technical Support Document located in the docket.

EPA has amended the initial implementation dates as discussed in Section III.C. This change revises the initial implementation date for some requirements to May 15, 1997.

Many commenters noted that the sign requirements for nozzle operating instructions, air quality district phone number, and toxic warning are redundant and unnecessary since all stations are required to post these signs as a matter of state or local

regulations. Although EPA understands that these signs are already required, the FIP measures are intended to be complete regulations. The sign requirements are included in the FIP rule for consistency with local rules, to provide a complete regulation from which districts may model their local rules, and to ensure that the requirements are not overlooked simply because they do not appear in the FIP rule.

Several commenters requested that dual hose phase II systems be allowed to remain in service rather than removed within one year of final rule promulgation. EPA's concurs with this comment and has revised the FIP measure accordingly.

The references to CARB test methods, which appeared in the proposed rule, have been removed because the methods are currently under revision and have not yet been adopted. The adoption of these methods is expected in the near future, and districts should be aware of their availability when revising service station rules.

EPA is also clarifying the proposed inventory and reduction estimates. The revised reduction estimates are slightly less than described in the FIP proposal.

(3) Future rulemaking. All of the FIP area air districts, with the exception of El Dorado, Placer, and Feather River, are currently in the process of revising or have committed to revise their service station SIP rules to replace the FIP requirements. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP

rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

k. Waste Burning (40 CAR 51.2961(k) - South Coast, Ventura).

(1) Summary of proposal. As described in the Proposed FIP at 59 FR 23313, EPA proposed that all waste burning activities in the three FIP areas be restricted to a burn/no-burn day program which takes into consideration ambient ozone air quality.³⁴ The measure would complement current programs designed to reduce particulate matter emissions. After January 1, 1996, waste burning activities would be restricted on days when the California ambient ozone standard (0.09 ppm) is predicted to be exceeded.

EPA would implement this measure by establishing a notification system which complements the current systems used for current burn/no-burn day programs in the FIP areas.

(2) Summary of major comments, responses and changes to the measure. EPA received testimony and/or comment letters from approximately twenty parties. These included: fire, agricultural, and business associations; local, state, and Federal natural resource and fire protection agencies; and local air pollution control agencies. Because of the length of the comments and issues raised, only a summary of the comments, responses, and changes are provided below. The comments can generally be divided into three groups: forestry/fire protection, agricultural, and current no-burn day programs.

³⁴ See 40 CFR 51.100 (hh)(1).

Based on comments received, issues raised, and new information submitted after the proposal, EPA is finalizing the proposed FIP rule for the South Coast and Ventura areas with some modifications. EPA is not finalizing the waste burning rule in the Sacramento FIP area at this time. These modifications include exempting waste burning operations intended for fire hazard reduction and ecosystem management. Emissions from these exempt operations are not significant when compared to emissions from agricultural burning operations.

EPA has amended the initial implementation dates. This change revises the initial implementation date for some requirements from January 1, 1996, to May 15, 1997.

The majority of comments received were from local, state, and Federal agencies responsible for prescribed burns intended to reduce fire hazards and/or provide ecosystem management. Commenters indicated that the FIP measure would restrict their ability to reduce fire hazards. It was never EPA's intention to hinder fire protection agencies in their efforts to reduce fire hazards. Therefore, EPA will revise the FIP measure to exempt prescribed burns performed for public safety or to reduce fire hazards. EPA requests that the agencies responsible for reducing fire hazards do their utmost to avoid scheduled burn activities on days predicted to exceed the State ozone standard.

Several commenters stressed that fire is an integral natural component of many California ecosystems. Fire suppression activities over the last one hundred years have altered the

natural fire regimes in fire-adapted ecosystems, but many land managers are now reintroducing fire to improve forest/wildland health. This "ecosystem" burning enhances reproduction and vigor of desirable vegetation, improves nutrient cycling and wildlife habitat, and reduces forest/wildland susceptibility to insect infestation and disease. Over the long term, ecosystem burning will produce healthier wildlands which are less likely to be destroyed by catastrophic wildfire.

Although there is continuing debate over the tradeoff between ecosystem burning and wildfire emissions, at this time, EPA agrees with the commenters that the environmental benefits derived from ecosystem burning justify an exemption from the FIP waste burning measure. Therefore, EPA will revise the FIP measure to exempt ecosystem burning. EPA does not believe that this action will be inconsistent with its emerging policy regarding prescribed fire/wildfire emissions tradeoffs or the revision of the PM-10 NAAQS, but EPA will monitor these activities and revise the FIP at a later date if necessary. EPA requests that the agencies responsible for conducting ecosystem burning do their utmost to avoid scheduled burn activities on days predicted to exceed the ozone standard..

Several agricultural associations and one air pollution control district indicated that the waste burning measure would negatively impact double cropping and levee maintenance in the Sacramento FIP area. They indicated that the most critical time of the year for farmers to burn in Sacramento is in early fall

(between fall harvest and spring planting). It was also pointed out that the 1991 Rice Straw Burning Reduction Act would reduce burning. Several air pollution control districts in the Sacramento FIP area commented that the California Health & Safety Code already authorizes them to declare no-burn days when high ozone levels occur and that the proposed measure may be unnecessary. For these reasons, EPA is not finalizing the waste burning rule in the Sacramento area at this time. EPA requests that the agencies overseeing and sources conducting agricultural burning do their utmost to avoid scheduled burn activities on days predicted to exceed the ozone standard.

In the FIP proposal, EPA asked commenters for an estimate of the VOC reductions created by the Rice Straw Burning Reduction Act. While EPA acknowledges that some reductions may be achieved by the Act, estimates provided by one commenter indicated that a 23-40 percent reduction in rice burning has occurred, with some additional reductions expected as the Act is fully implemented. EPA will continue to work towards obtaining an accurate estimate of the potential VOC reductions from the decreased burning of rice straw during the period of peak ozone concentrations.

The VCAPCD concurred with EPA's proposal and urged replacement of the FIP measure with their recently adopted SIP measure, which is very similar to EPA's proposed measure.

(3) Future rulemaking. VCAPCD has adopted and submitted a comparable rule. SCAQMD committed in their 1994 AQMP to adopt a similar rule. EPA will continue to encourage and support rule

development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

1. Residential Water Heaters (40 CFR 51.2961(1) - Sacramento).

(1) Summary of proposal. As described in the Proposed FIP at 59 FR 23314, EPA proposed that all residential water heaters sold and installed in the Sacramento FIP area emit less than 40 nanograms of NOx calculated as weight equivalent NOx per joule of heat output.

(2) Summary of major comments, responses and changes to the measure. EPA received a comment letter from the CA Solar Energy Industries Association (CAL SEIA). Many of the Sacramento area air pollution control districts indicated they support the proposed measure, but no additional comments were provided. A summary of the comments, responses, and changes are provided below.

CAL SEIA indicated that the FIP measure should set forth specific programs to be implemented by local governments which would lead to the installation of solar water heater systems in new residential construction. CAL SEIA pledged their assistance to help develop such programs. While EPA strongly supports the use of solar technologies and is willing to work with the districts toward this effort, we believe that the development of these types of specific regulatory programs are best done at the local level. We encourage CAL SEIA to work with these districts in the development of such programs.

EPA has amended the initial implementation dates as discussed in Section III.C. This change revises the initial implementation date for some requirements from January 1, 1996 to May 15, 1997.

(3) Future rulemaking. Many of the Sacramento FIP area districts, with the exception of the El Dorado and Feather River districts, have committed to adopt a comparable regulation. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

m. Stationary Internal Combustion Engines (40 CFR 51.2961(m) - Sacramento).

(1) Summary of proposal. As described in the Proposed FIP at 59 FR 23314, EPA proposed that all owners or operators of stationary internal combustion (IC) engines rated at equal to or greater than 50 brake horsepower meet applicable emissions standards according to a specified compliance schedule. Sources can replace units with an electric motor, decrease the annual operating time of the unit to less than 200 hours per year, meet specified NOx emission limits, or meet applicable percent reductions requirements. The rule also requires that subject owners or operators meet the NOx limits without increasing existing CO and VOC emissions levels.

The proposal required compliance with the emission limits by May 15, 1995 for those units not needing retrofits or new control

equipment installations to comply. Sources replacing units with an electric motor or decreasing annual operation time of the unit to less than 200 hours per year are required to be in compliance by May 15, 1999. Sources meeting the specified NOx emission limits or applicable percent reductions requirements are required to comply by May 15, 1997.

The proposal requires that units rated at equal to or greater than 300 brake horsepower and complying with the rule by meeting the emission limits or applicable percent reductions requirements be monitored with continuous emissions monitors (CEMs). For those units rated less than 300 brake horsepower and greater than 50 brake horsepower and also complying with the rule by meeting the emission limits or applicable percent reductions, owners or operators are required to conduct biennial source tests and establish operating parameter monitoring requirements for the units. The proposal requires an initial compliance test be performed and continuous compliance be demonstrated thereafter with the use of either CEMs or parameter monitoring of specific operating conditions.

(2) Summary of major comments, responses and changes to the measure. EPA received testimony and/or comment letters from approximately seven commenters. Because of the length of the comments and issues raised, only a summary of the comments, responses, and changes are provided below. Readers should refer to the supplement to Technical Support Document found in the docket for a more detailed discussion of comments, responses, and

changes. EPA is finalizing the proposed measure with some modifications.

EPA has amended initial implementation dates as discussed in Section III.C. This change revises the initial implementation date for some requirements to May 15, 1997.

One commenter indicated that EPA should expand the proposed exemption category to include remote engines used in oil and natural gas production. The commenter contends that control costs for remote engines are much higher than the average value determined by EPA. Although the commenter requested EPA to analyze data regarding cost-effectiveness for remote engines, no cost analysis data was provided by the commenter. However, in response several comments received regarding the stringency of the proposed limits, EPA has modified the emission standard requirements to for smaller sized engines. The percent reduction requirements were also relaxed to allow more flexibility in meeting the emission standards of the rule.

One air pollution control district commented that EPA should, in addition to diesel engines, exempt all engines rated at less than 125 brake horsepower and operated less than 200,000 horsepower hours per year. The exemption for diesel engines rated at less than 125 brake horsepower and operated less than 200,000 horsepower hours per year is allowed because of the higher cost-effectiveness numbers determined when the emissions inventory was compiled and analyzed by EPA. According to the emissions inventory analyzed by EPA, the cost-effectiveness

numbers for controlling engines rated at less than 125 brake horsepower and operated less than 200,000 horsepower hours per year which are not operated on diesel fuel are reasonable and within the range of what is required for larger rated engines operated during longer periods of time.

Two air pollution control districts commented that EPA did not give adequate justification that the proposed requirements for IC engines located in the Sacramento basin are economically feasible. Alternatively, the two districts asked that EPA consider standards similar to recently adopted local control measures. EPA has conducted a preliminary review of the recently adopted local measures and determined that the measures do not adequately reduce emissions to the extent that they can replace the FIP measure. EPA acknowledges that the district rules will strengthen the SIP but in order for the area to demonstrate attainment, NOx emissions from many categories, including IC engines, will need to be reduced beyond levels adopted by the districts. However, EPA has relaxed the emissions standards applying to smaller engines and modified the percent reduction requirements.

One commenter indicated that EPA should relax its proposed standards (e.g., lean-burn NOx standard from 45 ppm to 140 ppm) because the standards could only be met through electrification. Another commenter indicated that EPA should modify the lean burn and rich burn engine limits to 50 ppm or 90 percent reduction and 150 ppm or 80 percent reduction, respectively, because the limits

in the proposed FIP rule could not be met with existing control technology. Both commenters claimed that the only way for its engines to meet the proposed standards would be to replace them with electric motors.

EPA has revised the NOx standards and believes the revised limits can be achieved through available control technology. EPA is obligated to enact regulations stringent enough to demonstrate attainment of the ozone NAAQS. In cases where certain types of engines are unable to meet the revised limits despite having applied post-combustion control, a combination of combustion modifications and post-combustion control may be necessary.

One commenter indicated that EPA has not documented that internal combustion engines in the Sacramento basin are a major source of NOx emissions. The commenter claimed that compliance with the proposed NOx limits by means of electrification or SCR is not technically feasible for sources that do not comprise a major portion of the NOx emissions inventory. Two air pollution control districts commented that EPA did not provide an accurate inventory and emissions database to determine that the control measures will not have extreme adverse impacts on segments of the affected industry. EPA believes that the emissions inventory compiled and analyzed by EPA indicates that IC engines are a significant enough category to regulate as part of the FIP, especially compared to what is being required of other sources. EPA will continue to seek updated information from the districts responsible for these sources. EPA also believes the proposed

limits for the applicable engines are feasible. The commenters did not provide any additional inventory data or cost information to substantiate that the proposed limits will have an extreme adverse impact on the affected industry. However, in order to provide further flexibility in meeting the FIP rule, EPA has relaxed the emissions standards for smaller engines and revised the percent reductions requirement.

An air pollution control district commented that EPA should provide cost-effectiveness figures for natural-gas fired, lean burn engines because they are expected to be a large percentage of their inventory. The technical support document identifies control costs for engines identified by the district. If the district is aware of new or additional information, EPA asks that it be submitted expeditiously.

An air pollution control district asked that the limitation on landfill gas fired IC engines should be reviewed with respect to 52.2961(g), Municipal Waste Landfills, so as not to preclude the economic use of IC engines as control devices in minimizing VOC emissions from these landfills. After control, the total NOx reductions for 5 out of 7 engines surveyed will be 0.013 tpd or 5 tpy. EPA concurs that due to the high cost-effectiveness for a very low level of reduction achieved for these sources, landfill gas engines will be exempted.

One commenter indicated that the proposed IC engine definition is not consistent with other provisions of EPA's recent nonroad engine rule. The commenter indicated that EPA

should exempt tactical equipment (e.g., auxiliary ground equipment) from the stationary IC engine provisions. EPA will modify the proposed stationary source definition for consistency with the recently adopted mobile source definition. The commenter did not provide any information regarding number of IC engines or any justification as to why affected IC engines could not meet the proposed requirements. However, in order to provide further flexibility in meeting the FIP rule, EPA has revised the emissions standards for smaller engines and revised the percent reductions requirement.

One commenter indicated that EPA should modify the final compliance date for retrofits from May 15, 1997 to December 31, 1997. The commenter requested a phased-in, staggered retrofit schedule that coincides with existing retrofit schedules outlined in local NOx regulations for other areas in California. EPA concurs with the need to provide the additional time to accommodate the impacts of concurrent rulemaking in other parts of California.

One commenter expressed concern about the consistency of NOx emissions limits between the FIP and local NOx regulations and requested the limits be modified for consistency with prior Lowest Achievable Emission Rate (LAER) determinations. EPA concurs with the need for additional time for engines which have recently gone through LAER. A provision has been added to the rule to allow five additional years for engines which have gone through a LAER determination over the past 5 years.

One commenter indicated that EPA should modify the procedure used to determine percent NOx reduction. The commenter suggested allowing sources to meet either 120 percent of the post-control NOx level or the pre-control baseline NOx level reduced by the applicable percent reduction. The commenter misunderstood the intent of this FIP requirement. The 120 percent of uncontrolled level requirement for compliance with CO and VOC pollutants is intended to encourage the use of good combustion practices when controlling NOx emission levels, to prevent the increase of CO and VOC emissions at the expense of lower NOx emissions, and to establish a CO and VOC limit for affected sources. The intent was not to provide a compliance margin for CO and VOC. The NOx, CO, and VOC limits are all subject to the compliance margins established within their respective test procedures.

(3) Future Rulemaking. Yolo-Solano AQMD and El Dorado County APCD recently adopted and submitted regulations for this category of sources. Although these submittals will not replace the FIP measure (as previously discussed), EPA intends to process these SIP submittals in the very near future. Sacramento AQMD and Placer APCD are scheduled to adopt a comparable measure during 1995. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

n. Biomass Boilers and Steam Generators (40 CFR 51.2961(n) - Sacramento).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23315, EPA proposed that all owners or operators of biomass boilers with rated heat input capacity equal to or greater than 5 million British thermal units per hour (mmBTU/hr) meet applicable emissions standards according to a specified compliance schedule through reporting, recordkeeping, and testing requirements. Owners or operators have a choice of meeting an emission limit of 70 ppm corrected to 12 percent volume stack gas carbon dioxide on a dry basis averaged over a period of 3 consecutive hours or reducing the uncontrolled exhaust gas stream NO_x concentration by 50 percent. Owners or operators must meet the NO_x limits without increasing existing CO and VOC emissions levels.

After May 15, 1997, all applicable biomass boilers are subject to the proposed standards. Applicable units are required to utilize continuous emission monitors (CEMs) to demonstrate continuous compliance. The proposal requires an initial compliance test be performed and continuous compliance be demonstrated thereafter with the use CEMs.

(2) Summary of major comments, responses and changes to the measure. EPA received comment letters from five commenters. Because of the length of the comments and issues raised, only a summary of the comments, responses, and changes are provided below. Readers should refer to the supplement to Technical Support Document found in the docket for a more detailed discussion of comments, responses, and changes.

EPA has amended the initial implementation dates as discussed in Section III.C. This change revises the initial implementation date for some requirements to May 15, 1997.

Three commenters requested changes to the NO_x emission limits and an extension of the deadline required for installation of CEMs. The commenters requested that EPA change the rule to coincide with the limits (i.e., 115 ppm) recently adopted by the Placer and El Dorado APCDs.

The commenters contend that the 70 ppm limit proposed in the FIP should be changed to 115 ppm for reasons that existing boilers subject to the rule and future similar units are unable to meet the proposed limit without causing significant increases in VOC and CO emissions, and that it is technologically infeasible to install retrofit technologies on such units. EPA believes the proposed FIP limits are feasible and have already been demonstrated on other biomass boilers. For the source where information was provided, the suggested limit of 115 would not reduce emissions, since the source in question was already achieving a 90 ppm limit prior to the FIP proposal. The commenters did not submit adequate information to justify the claim that retrofit technology was infeasible. Generally, most facilities when faced with a requirement for Selective Noncatalytic Reduction (SNCR) have claimed that it is not feasible. However, this has not proven to be true in our experience with comparable sources.

Two of the commenters also claim that the CEM requirement

places an extreme economic burden on the source, and EPA should allow an additional 24 months for the installation of CEMs. EPA believes that the CEM is necessary to properly run the SNCR.

One source requested that EPA allow sources to comply with equivalent specific emission rates expressed in units of pound per million British thermal units (lb/MMBTU) or ppm concentration limits and different diluent percentages based on an F-factor calculation. EPA believes that because of the number of sources covered by the rule, establishing case specific limits is not feasible. The commenter can convert the emission rates in the FIP rule by making software changes.

The same commenter also requested that EPA change the 3-hour rolling average emissions limit to a 24-hour rolling average limit for the NO_x and CO emission rates, use existing EPA and local permits to establish CO emission limits on units not undergoing modifications, and exempt units from meeting emission standards during times of start-up and shutdown. EPA believes that the 3-hour rolling average allows sufficient time to account for process fluctuations and that a 24-hour rolling average would substantively reduce the reductions achieved by the NO_x limit. The proposed rule already states that no emission test shall be conducted during start-up, shutdown, or under breakdown conditions for the purpose of demonstrating compliance.

(3) Future Rulemaking. Placer and El Dorado County APCDs recently adopted biomass boiler regulations. EPA's preliminary review of these rules and the supporting documentation indicates

that the SIP rules will not adequately reduce emissions sufficiently to meet RACT or to demonstrate attainment in the FIP area. The submitted documentation does not justify the higher NOx limits in the SIP rules. EPA will continue to work with these districts to resolve issues concerning the stringency of their biomass regulation.

o. Gas Turbines (40 CFR 51.2961(o) - Sacramento).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23316, EPA proposed that all owners or operators of stationary gas turbines with rated heat output capacity equal to or greater than 0.3 megawatts (MW) meet applicable emissions standards according to a specified compliance schedule through reporting, recordkeeping, and testing requirements. The emission limits specified for units rated greater than 0.3 MW and less than 2.9 MW is 25 ppm times a demonstrated percent efficiency. For units rated equal to or greater than 2.9 MW, the specified emissions limit is 9 ppm times a demonstrated percent efficiency. The rule also requires that subject owners or operators meet the NOx limits without increasing CO levels.

After May 15, 1997, all applicable stationary gas turbines are required to comply with the proposed standards. Units with a rated heat output capacity equal to or greater than 2.9 MW are required to utilize CEMs. For those units rated less than 2.9 MW and greater than 0.3 MW, owners or operators may either install CEMs or continuously monitor operating conditions. The proposal requires an initial compliance test be performed and continuous

compliance be demonstrated thereafter with the use of either CEMs or monitoring specific operating conditions.

(2) Summary of major comments, responses and changes to the measure. EPA received comments from an affected source and an air pollution control district. Because of the length of the comments and issues raised, only a summary of the comments, responses, and changes is provided below.

Two comment letters were received regarding the gas turbine proposal. The comments were in regards to the emission limit requirement of 9 ppm for units rated greater than or equal to 2.9 MW. The commenters claimed that emission reduction technology for large frame, simple cycle configured, high exhaust gas temperature gas turbine engines has not been commercially demonstrated. Because of this reason, the commenters claim that emission control equipment (i.e., Selective Catalytic Reduction) required to achieve the limit of 9 ppm may not be technologically feasible in practice for these engines, and suggests that a limit of 15 ppm be allowed. EPA believes that the 9 ppm limit could be achieved and may be more cost effective if the unit is converted to a combined cycle unit; however, EPA concurs with the comment and has revised the limit to 15 ppm for dry low-NOx combustor technology and 9 ppm for SCR.

EPA has amended initial implementation dates as discussed in Section III.C. This change revises the initial implementation date for some requirements to May 15, 1997.

(3) Future Rulemaking. EPA will continue to encourage and

support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

p. Large Industrial, Commercial, and Institutional Boilers, Steam Generators, and Process Heaters (40 CFR 51.2961(u) - Sacramento).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23315, EPA proposed that all owners or operators of large industrial, commercial, and institutional boilers, steam generators, and process heaters with rated heat input capacity equal to or greater than 5 mmBTU/hr meet applicable emissions standards according to a specified compliance schedule through reporting, recordkeeping, and testing requirements. Owners or operators of units are required to meet an emission limit of 30 ppm for gaseous fueled units and 40 ppm for liquid fueled units corrected to 12 percent volume stack gas carbon dioxide on a dry basis averaged over a period of 3 consecutive hours. Owners or operators must meet the NOx limits without increasing existing CO emissions levels.

After May 15, 1997, all applicable boilers are subject to the proposed standards. Applicable units are required to utilize CEMs to demonstrate continuous compliance. The proposal requires an initial compliance test be performed and continuous compliance be demonstrated thereafter with the use of CEMs.

(2) Summary of major comments, responses and changes to the measure. In today's action, EPA is finalizing the proposal with

some modifications. EPA received comment letters from two air pollution control districts. The commenters did not comment on the proposed rule other than to indicate that they had each recently adopted a rule to cover similar sources and that the rule has been submitted for inclusion in the SIP.

The Yolo-Solano AQMD and Placer and El Dorado APCDs recently adopted rules to reduce NOx emissions from similar sources as those covered by the FIP rule. These rules were recently submitted to EPA and the limits appear, based on preliminary review, to be substantively equivalent to the FIP measure. EPA intends to process these SIP submittals in the very near future. When these rules are approved into the federally enforceable SIP, EPA expects to modify 52.2961(u) as appropriate.

EPA has amended the initial implementation dates as discussed in Section III.C. This change revises the initial implementation date for some requirements May 15, 1997.

(3) Future Rulemaking. Yolo-Solano AQMD and Placer and El Dorado County APCDs recently adopted and submitted regulations for this source category. As described above, EPA intends to process these submittals in the very near future. Sacramento AQMD is scheduled to adopt a comparable measure during 1995. EPA will continue to encourage and support rule development and adoption in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

q. Small Industrial, Commercial, and Institutional Boilers, Steam Generators, and Process Heaters (40 CFR 51.2961(v) -

Sacramento):

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23315, EPA proposed that all owners or operators of small industrial, commercial, and institutional boilers, steam generators, and process heaters with rated heat input capacity less than 5 million but greater than 1 mmBTU/hr meet applicable emissions standards according to a specified compliance schedule through reporting, recordkeeping, and testing requirements. Owners or operators of units are required to meet an emission limit of 30 ppm NOx standard. After May 15, 1997, all applicable boilers are subject to the proposed standards.

(2) Summary of major comments, responses and changes to the measure. In today's action, EPA is finalizing the proposal with minor modifications. EPA received comment letters from four air pollution control districts. Three of the commenters did not comment on the proposed rule other than to indicate that the reductions were either negligible and/or not cost effective. None of the commenters provided any new data regarding cost. EPA believes that although the rule is expected to achieve a small reduction (e.g., 9.2 tpy) compared to other measures, the reductions are cost-effective (actually resulting in a cost savings for many sources) and necessary given the reduction requirements for other source categories.

EPA has amended the initial implementation dates as discussed in Section III.C. This change revises the initial implementation date for some requirements to May 15, 1997.

(3) Future Rulemaking. None of the districts affected by this measure have committed to adopt a similar rule. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

3. Statewide Regulations.

a. EPA proposed statewide FIP rules for 5 area-source categories: architectural coatings, pesticides, aerosol paints, and consumer products (including antiperspirants and deodorants). As discussed above, EPA is not finalizing the consumer products regulations but instead approving CARB's statewide regulations for these categories. In the proposal (59 FR 23316-7), EPA summarized the Agency's rationale for applying the rules on a statewide basis, discussing particularly the advantages of statewide coverage with respect to enforcement, consistency, fairness, and cost reduction for the industry.

EPA continues to believe that these rules for common, highly portable VOC-containing substances will be most effective if applied uniformly throughout the State. EPA is not repeating the proposal's discussions, and EPA's responses to comments on the issue of geographic applicability appear in the review of the individual FIP rules.

b. Architectural Coatings (40 CFR 52.2959).

(1) Summary of proposal. As described in the proposed FIP at 59 FR 23317, EPA proposed that architectural coatings

supplied, sold, offered for sale, applied, solicited for use, or manufactured meet specified VOC content limits. The proposed limits built on existing architectural coatings regulations and would phase in lower VOC limits in 1996, 2000, and 2003.

(2) Summary of major comments, responses and changes to the measure. EPA received testimony and/or comment letters from numerous parties, including coating manufacturers, trade associations, and FIP area air pollution control districts. Because of the length of the comments and issues raised, only a summary of the major comments, responses, and changes are provided below. Readers should refer to the supplement to Technical Support Document found in the docket for a more detailed discussion of comments, responses, and changes. Based on comments received and issues raised, EPA is finalizing the proposed FIP measure with some modifications.

EPA has amended the initial implementation dates as discussed in Section III.C. This change revises the initial implementation date from January 1, 1996 to May 15, 1997. In addition, EPA has added or revised definitions, coating limits, and/or effective dates for certain categories.

Several paint manufacturers indicated that the CAA requirements of section 183(e) preempt EPA from its authority under section 110(c) to promulgate an architectural coatings measure in the FIP. Section 183(e) requires that EPA issue a national regulation or a control techniques guideline (CTG) for certain consumer products, which will likely include

architectural coatings. EPA believes that the FIP measure is not an attempt to issue a national regulation or CTG. As discussed at 59 FR 23290, EPA's authority under 110(c) allows EPA to act on behalf of the State under section 110(c); therefore, the FIP measure is analogous to a measure being adopted by the State. Because section 183(e) does not preempt a State from adopting an architectural coatings regulation, EPA, acting on behalf of the State, is not preempted by section 183(e) from promulgating an architectural coatings measure for the State. EPA is currently planning to propose a national architectural coatings rule in 1995 pursuant to section 183(e). Had this rulemaking been completed it may not have been necessary for the FIP to address architectural coatings separately. Because architectural coating emissions make up a significant portion of the inventories, the FIP measure is needed to provide the necessary reductions for demonstrating attainment in the FIP areas. In addition, absent EPA's issuance of a source category listing and regulatory schedule under section 183(e) that sets the architectural coatings category for regulation by a specific date, EPA has not been in a position to credit emissions reductions expected from such regulation. Consistent with EPA's implementation of these section 183(e) obligations, EPA will evaluate the expected reductions from such a national rule and reevaluate the continued need for the FIP measure.

Several commenters indicated that the FIP measure would undermine EPA's Regulatory Negotiation (Reg Neg) process and

should be consistent with the proposal developed through the Reg Neg. Despite over two years of Reg Neg meetings and discussions, a consensus proposal was not achieved by the Reg Neg Committee. Although valuable information was shared and substantial progress made, EPA concluded in September, 1994 that it was appropriate to terminate the negotiations. EPA's Office of Air Quality Planning and Standards is expected to propose a measure in the near future which meets the 183(e) requirements and reflects information from the Reg Neg.

Where possible, the FIP measure has attempted to use similar concepts and categories as those found in the last draft Reg Neg proposal, dated July 1994. However, it is not practical or consistent with air quality goals for the FIP measure to rely on limits taken from the last Reg Neg draft proposal which would, in effect, relax certain current limits in California architectural coating regulations and would not meet the emission reduction needs of the FIP areas. Readers should refer to the Technical Support Document found in the docket for a further discussion of changes made to the proposed FIP measure which are an outgrowth of EPA's final Reg Neg draft proposal.

A couple of paint manufacturers and trade associations indicated that reducing the VOC content of coatings below an optimal level would be counterproductive because the lower VOC coatings would result in the use of more coatings, more thinners, and more frequent recoating. One commenter indicated that "we have substantial evidence, based on experience and expert

opinion, that this strategy is very limited in its effectiveness." Despite requests by regulators for technical documentation which might support the claims that low VOC coatings are counterproductive to air quality goals, none of these commenters have provided compelling evidence on which, when, and where the lower VOC coatings are counterproductive.³⁵ In addition, these commenters discount the progress made in developing low VOC coatings and take issue with the quality of these coatings. These commenters refer to the lower VOC coatings as less adequate alternative products, but they did not identify which products are less adequate and under which circumstances or performance situations the lower VOC products are perceived to be less adequate.

EPA believes that the environmental benefits from the lower VOC coatings outweigh the potential for the negative impacts described by the commenters. These benefits include but are not limited to: less VOC emitted during application; less VOC emitted during clean-up; reduced worker exposure to hazardous chemicals; and reduced fire hazards. Because the coverage rates per gallon can be higher for low-VOC high-solids coatings, these low-VOC coatings can reduce or equal the per-square-foot cost of

³⁵ In January, 1992, CARB released a technical paper titled, "Field Investigation on Thinning Practices During the Application of Architectural Coatings in Selected Districts in California." The paper concluded that after visiting 85 different application sites, only 2 percent of all coatings observed were in violation due to thinning. This finding does not support claims by certain paint manufacturers that lower VOC limits resulted in increased use of thinners.

conventional, high VOC coatings. While it is true that the lower VOC limits will result in some higher VOC coatings being replaced by coatings using a different resin system, and that these changes may require adjustments by users (e.g., different surface preparation and application technique), insufficient information has been provided which shows that the lower VOC products are less adequate. On the contrary, EPA believes that the general acceptance and continued development of the low VOC coatings in the marketplace seems to contradict the claims of these commenters. EPA acknowledges that some contractors may prefer the continued use of high VOC coatings under certain circumstances and performance scenarios. However, in order to create an enforceable rule, these circumstances and associated performance requirements need to be articulated in a fashion such that they do not become a loophole³⁶ in the rule. EPA believes that the implementation dates in the FIP measure will allow sufficient time for manufacturers and users to transition to the lower VOC coatings. In addition, EPA will continue to analyze other possible mechanisms, such as fees, as a method for allowing additional flexibility in meeting the coating limits.

One coating manufacturer indicated that coatings meeting the SIP limits for three specific categories (i.e., waterproof sealers, semi-transparent stains, and varnishes) were technically infeasible and that the lower VOC coatings could not meet

³⁶ For example, one of the commenters is on record that paint manufacturers have used the quick dry category as a method to circumvent lower limits in current district rules.

industry performance requirements. The manufacturer requested that the proposed FIP limits for these three categories, which with the exception of the 2003 varnish standard are consistent with the current CA SIP limits for the three categories, be relaxed to allow a higher VOC content for the three categories. EPA does not concur with these recommendations. Although the manufacturer admitted experiencing problems with their lower VOC products, the manufacturer did not provide compelling technical data comparing available low VOC coatings with their higher VOC coatings. The manufacturer claimed that the products which comply with the current CA SIP limits are not feasible; however, the manufacturer currently markets numerous compliant products in CA and their product advertising appears to contradict their FIP comments. In addition, the manufacturer failed to acknowledge the abundance of compliant products, albeit competitors, in the market which meet current SIP standards. The FIP measure would maintain the current SIP limit for waterproofing sealers and semi-transparent stains. The FIP limit for varnishes would be lowered from its current SIP limit of 350 grams of VOC per liter (g/l) to 250 g/l effective in 2004. Because some 250 g/l varnishes are already entering the market and the FIP allows approximately eight years for continued development and acceptance of the lower VOC product, the varnish limit is technically feasible.

One air pollution control district commented that proposed limits for certain categories (to be implemented in 2000 and/or

2003) were not adequately supported by the technical support document. Specific categories mentioned included: flats; nonflats; primers, sealers, and undercoaters; traffic paints; and opaque stains and wood preservatives. Based on these comments, EPA has added additional information to the technical support document. In addition, limits and effective dates for certain categories (e.g., traffic paints) have been revised to allow for a higher limit.

Numerous coating manufacturers indicated that the purpose of the FIP was to correct alleged deficiencies in local SIP rules. The commenters stated that the local rules had previously been corrected for deficiencies, and therefore the FIP measure was unnecessary. They also stated that the architectural coating rules were not a component of the original SIP plans which were the focal point of the lawsuit and which EPA disapproved; therefore it was improper for EPA to supplant the local rules with FIP measures.

EPA is not promulgating this FIP measure to correct deficiencies, and the FIP measure will not replace local SIP rules. Rather, it builds on local rules to achieve additional reductions. The FIP measure was proposed because the category makes up a significant portion of the emissions inventory, additional VOC reductions are needed in the FIP areas, and the availability and continued development of low VOC coatings and technology demonstrated that the limits were feasible.

Several coating manufacturers indicated that EPA did not

have the authority to adopt a statewide measure and that the statewide measure was unnecessary. Comments from the FIP-area air pollution control districts and a coalition of environmental groups indicated support for a statewide measure. EPA's rationale for a statewide measure was described in the proposed FIP at 59 FR 23316 and is discussed again under Section III.A.5. EPA believes that because of the close proximity of other major urban areas to the FIP areas, the measure would be substantially less effective if applied only to the FIP areas. In addition, because of the Agency's limited resources, EPA anticipates greater difficulty if faced with enforcing a rule only applicable in the FIP areas. Because of the larger volume of sales expected and the greater ease in marketing, a statewide measure is expected to reduce the cost of manufacturing low-VOC coatings for many manufacturers. Prior to the FIP proposal, many paint manufacturers had indicated a preference for consistent limits within California. During CARB's adoption of its "Suggested Control Measure for Architectural Coatings," CARB stressed the importance of uniformity among districts. For these reasons EPA has chosen to promulgate a statewide architectural coatings measure.

However, as discussed in section III.A.4. of this notice, a FIP is not intended to be a permanent solution for a State's air quality problems. The State currently does not have legal authority to regulate architectural coatings on a statewide basis. Nor has CARB indicated an interest in seeking legislation

that would give the State such authority. Therefore, once the SIP is approved and the FIP rescinded, the uniformity created by the FIP rule will no longer exist. EPA believes that a potential solution to this dilemma could be for CARB to seek legislative authority to regulate architectural coatings on a statewide basis.

A few coating manufacturers indicated the need for EPA to complete a separate environmental and economic study as required in section 183(e) and/or California law (i.e., the California Environmental Quality Act or "CEQA"). As previously discussed, EPA's FIP action is not an attempt to meet its 183(e) obligation and is therefore not subject to the 183(e) requirements. Although EPA is acting on behalf of the State, EPA is not subject to the requirements of State law (e.g., CEQA).

Only one paint manufacturer provided substantive comments on the three potential economic incentive options described at 59 FR 23318. The commenter opposed the use of a corporate average VOC emission limit or manufacturers bubble, and conditionally supported a fee program.³⁷ As mentioned earlier, EPA will continue to analyze other possible mechanisms, such as fees, as a method for allowing additional flexibility in meeting the coating limits.

Two commenters indicated that the control of VOC emissions

³⁷ The commenter did support an exceedance fee in lieu of compliance with VOC limits, but wanted assurances that the fee payment would protect against federal, state, or local enforcement. EPA can not provide such assurances because the FIP measure does not replace current SIP rules.

is misdirected because the reduction strategies do not adequately address NOx emissions as ozone precursors per the National Research Council's Report, underestimate mobile source emission inventories, and fail to adequately account for biogenic emissions.

EPA believes that the attainment strategy used in each of the FIP areas adequately addresses the need for VOC and NOx reductions. In each of the areas, EPA has determined, with the assistance of the State and local districts, that both NOx and VOC reductions are necessary to attain the ozone standard. Although improvements to mobile source inventory estimates are ongoing, the mobile source inventories used in the FIP reflect the best and latest estimates available. As new mobile source estimates become available, EPA along with the State and districts will consider adjustments to the ozone attainment strategies as necessary. Biogenic emissions are accounted for in the UAM used to determine the NOx and VOC reductions needed for attainment, as discussed in Section III.G.3.

(3) Future Rulemaking. The SCAQMD has committed in their 1994 AQMP to adopt an architectural coatings rules which achieves reductions beyond those proposed by the FIP rule. The other FIP area districts have committed to adopt or update their architectural coatings rules; these rules are expected to be equivalent or less stringent than the FIP rule. EPA will continue to encourage and support rule development and adoption in the affected areas in order to ensure that the FIP rule is

replaced by SIP approval before the FIP rule is scheduled for implementation. In addition, EPA is expected to soon propose a national architectural coatings rule as required under section 183(e). Upon promulgation of the 183(e) regulation, the FIP measure will be reevaluated.

c. Consumer Products and Aerosol Paints

(1) Consumer Products

As described in the proposed FIP at 59 FR 23318, EPA proposed to control VOC emissions from consumer products (40 CFR 52.2957(b)) and antiperspirants and deodorants (40 CFR 52.2957(b)). The proposal predominantly mirrored CARB's adopted but previously not submitted consumer product and antiperspirant regulations. On November 15, 1994 EPA received from CARB a formal submittal of their Consumer Products and Antiperspirant and Deodorant rules for approval into the SIP. As described under Section II.B.3., EPA is invoking the "good cause" provision in the APA to approve the CARB Consumer Products and Antiperspirant and Deodorant rules without further comment. Therefore, EPA is not finalizing its FIP proposal at this time.

(2) Aerosol Coating Products (40 CFR 52.2958)

(a) Summary of Proposal As described in the proposed FIP at 59 FR 23319, EPA proposed to restrict the VOC content of various categories of aerosol coatings. These restrictions would be effective January 1, 1996, and were proposed in order to reduce emissions of VOCs throughout the State of California. The proposed FIP aerosol paint rule was based on a draft regulation

workshopped by CARB on November 10, 1993.

(b) Summary of major comments, responses, and changes to the measure. Based on comments received and issues raised, EPA is finalizing the proposed FIP measure with some modifications. EPA has amended initial implementation dates as discussed in Section III.B.1.c. This change revises the initial implementation date from January 1, 1996, to May 15, 1997.

EPA received several comments from one industry member. The commenter urged consistency between the emerging CARB aerosol coating regulations and the proposed FIP aerosol coating regulations, as well as other changes. Among these changes, the commenter requested that EPA include a VOC content standard for aerosol lacquers in the final FIP regulations. The commenter suggests that the VOC content limit be set at 80 percent (presumably weight percent), with an effective date of January 1, 1996. The commenter asserts that the availability of spray lacquer would reduce VOC emissions compared to using lacquer in an air gun. Based on this comments and discussions with CARB staff, EPA has added a section which will allow the use of pigmented lacquers until January 1, 1998.

The commenter also suggested changes to other definitions, such as Hobby/Model/Craft coating. EPA believes that making these changes, which have not been made to the draft CARB rule, is inappropriate at this time. It is the Agency's intent to promulgate a FIP rule which parallels the emerging CARB rule in order to promote eventual FIP replacement by the State. Because

of this, EPA is reluctant to deviate from the draft CARB regulation.

In the proposal, EPA committed to modify the FIP proposal to be consistent with CARB's final regulation. Although CARB has not adopted its regulation as of this writing, EPA is attempting to maintain as much consistency as possible with the evolving CARB aerosol paint regulation. Therefore, EPA has made some changes to the proposal in order to incorporate changes reflected in CARB's latest draft aerosol paint regulation. The FIP revisions are based on the version of the CARB regulation workshopped during January 1995. These changes include: a) revising the definitions of exact match finish, flat paint products, floral spray, glass coating, high temperature coating, non-flat paint product, and pleasure craft topcoat; b) adding a definition of responsible party and modifying references to "manufacturer" to include references to "responsible party" where appropriate; c) modifying the Table of Standards -- 1996 VOC content limits for marine spar varnish, slip resistant coating, and webbing/veil coating -- to match those in the June 1994 draft CARB rule; d) modifying the method of calculating the VOC content of multi-component kits; and e) slightly modifying the test method procedure for metallic coatings; f) adding a test method for acid content; g) permitting alternative test procedures following a source-specific FIP revision; h) adding definitions for engine paint, precoat, retail outlet, and working day; i) clarifying the definitions of enamel, exact match finish--

automotive, metallic coating, rust converter, and vinyl/fabric/polycarbonate leather coating; j) modifying the rule to allow more flexible use of methylene chloride; k) extending the use of pigmented lacquers; l) clarifying the labeling and reporting requirements; and m) clarifying test methods.

Minor formatting and wording modifications were also made to the regulation to improve conformity to the style requirements of the Office of the Federal Register.

(c) Future Rulemaking. CARB is expected to adopt their aerosol paints regulation in early 1995. EPA will continue to encourage and support CARB's rule development and adoption in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation. It is important to note that State law may effectively prohibit CARB from submitting some future effective limits and reductions to EPA. Because of this, EPA may not be able to rescind in whole the FIP aerosol paints measure. If EPA retains all or part of the FIP aerosol paints regulation, the Agency will work with CARB and industry to track the progress made in reducing the VOC content of their coatings to the limits that are currently scheduled to take effect in 1999. If CARB revises these limits or extends compliance dates, EPA will consider revising the FIP measure as appropriate. In addition, EPA is in the process of developing standards as required under section 183(e) of the CAA. EPA will continue to monitor the outcome of the section 183(e) process and make adjustments to the FIP measure as appropriate.

d. Pesticides (40 CFR 51.2960 - Statewide).

(1) Summary of proposal. As described at 59 FR 23320, EPA proposed that all manufacturers of agricultural and structural pesticides analyze the VOC content of their products by June 1996. The proposal then described a protocol by which EPA would use this analytic data to establish a pesticide VOC content limit. One year later (approximately 1998), distribution of pesticides with higher VOC contents would be prohibited in California. Two years later (approximately 1999), storage and use of such products would also be prohibited.

(2) Summary of major comments, responses and changes to the measure. EPA received numerous comments from governmental agencies, citizen groups, and industries that manufacture and use pesticides. Because of the volume, only a summary of the major comments is provided in this section. More detailed discussion of the comments and responses can be found in the technical support to this action.

Several commenters claim that EPA's proposal would decimate California agriculture, although none presented supporting evidence. EPA continues to believe that VOC emissions from pesticides can be dramatically reduced without significant disruption to the agriculture or construction industries, and is promulgating the proposed measure with limited modifications discussed below.

Many commenters suggested changing the procedures for estimating emissions. EPA has added 40 CFR 52.2960(g) as

described in Section III.C.3.d.(3), and continues to be open to using information besides California's 1990 Pesticide Use Report (PUR) data to set the baseyear inventory in 40 CFR 52.2960(c)(2)(i). Otherwise, EPA believes the proposal relied on the best information available and has not changed 40 CFR 52.2960 or the technical support in this regard. Current and projected future emission estimates are based on information provided by California and will be revised upon receipt of analytical data required by the FIP measure.

Many commenters noted that the proposed measure might inappropriately restrict the availability of pheromones and of pesticides needed during emergency pest situations. EPA concurs with this concern, and has added 40 CFR 52.2960(c)(5) to exempt certain products and situations from distribution, storage and use restrictions. These are limited exemptions that will not significantly affect VOC emission reductions.

Several commenters recommended implementing the measure only in the three FIP areas, although many more suggested Statewide applicability. As discussed in Section III.A.5., EPA is finalizing Statewide implementation of the measure as proposed partly in light of enforceability concerns and the overwhelming amount of comment favoring Statewide application.

EPA proposed to establish a VOC limit designed to reduce VOC emissions from pesticides by 20-45 percent. Several commenters claim this range is too high, although none provided supporting evidence. California selected a 20 percent maximum reduction

requirement in the 1994 SIP, and believes this may be attainable through voluntary measures. EPA believes that minimal VOC reductions from pesticides are not equitable in light of the large reduction requirements that are needed for attainment and that have been placed on other VOC sources in California. After balancing the comments, equity concerns and other considerations, EPA has selected a 30 percent VOC reduction requirement from pesticides.

One commenter noted that wood preservative coatings applied to houses and other structures in the field would be subject to the proposed FIP pesticide measure although these products have been regulated traditionally under technology-specific architectural coating rules. The FIP architectural coating measure (40 CFR 52.2959), for example, sets specific VOC-limits for a variety of wood preservative coatings. EPA agrees that §52.2959 and analogous SIP measures are more likely to achieve cost effective emission reductions from these products, and has exempted certain wood preservative coatings from the definition of structural pesticides in §52.2960(b).

In addition, EPA has shortened record retention requirements as discussed in Section III.C., removed several references to "effective date" for consistency with other FIP measures, modified the deadline for submission of VOC content data, and made various minor modifications for clarity.

(3) Future rulemaking. Numerous commenters requested that EPA replace the proposed FIP measure with the SIP commitment

submitted to EPA on November 15, 1994. EPA agrees that the State is better equipped to reduce VOC emissions from pesticides, and Section II.B.4. discusses EPA's intention to continue encouraging the State's rule development and adoption in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation.

One component of California's SIP strategy that has already been implemented is a requirement for VOC analysis of liquid pesticide formulations (letters dated May 9 and June 9, 1994 from Barry Cortez, Department of Pesticide Regulation, to Pesticide Registrants). As a result, EPA has added 40 CFR 52.2960(g) (and modified other sections appropriately) to allow use of the data submitted to DPR for the purpose of establishing the VOC limit in 40 CFR 52.2960(c)(2). EPA has not included DPR's method as an alternative test method in 40 CFR 52.2960(f), however, because of unresolved technical concerns including the number of runs and the treatment of water.

4. Cap Regulations (40 CFR 52.2952, 40 CFR 52.2953, 40 CFR 52.2954, 40 CFR 52.2955, 40 CFR 52.2956).

a. Introduction.

(1) Summary of proposal. As described at 59 FR 23323, EPA proposed that subject facilities which emit at least four tons per year (tpy) of VOC or NOx in the year 2001 reduce their emissions up to 45 percent off 2001 base-year levels. In the year 1999, facilities would be required to submit compliance plans to EPA showing the methods they will use to achieve the

required emission reductions between the years 2001 and 2005. EPA specified emission quantification methods to measure emissions when the program was implemented. Facilities which emit between four and two tpy in 2001 would be required to submit annual compliance verification to ensure that they remain below the applicability level. Facilities with emissions less than two tpy in 2001 would not be subject to the proposed regulation. EPA proposed to implement a reduction rate of up to 9 percent annually between 2001 and 2005. EPA also discussed a manufacturers bubble approach as an alternative to the industrial and commercial coatings, solvents, and inks cap for VOC emissions.

(2) Summary of major comments, responses and changes to the measure. Several commenters claim that EPA's proposal would have adverse effects on California. EPA continues to believe that VOC and NOx emissions from these facilities can be reduced without significant disruption to the State's economy, and is promulgating the proposed measure in the South Coast with limited modifications discussed below. However, as many commenters noted, these reductions are best achieved through the efforts of the local agencies. EPA will continue to support the efforts of the SCAQMD and CARB and will evaluate replacement measures using the Clean Air Act and applicable policy and regulations (see for instance, the final economic incentive program (EIP) rules - 40 CFR Part 51 Subpart U).

In addition, as a result of public comments and additional

information collected since the FIP proposal, EPA is not promulgating the stationary source cap measures proposed for the Sacramento and Ventura areas. Among the most significant reasons for removing these measures were: inventory and modeling information provided in California's 1994 SIP submittal, public comment overwhelmingly opposed to the programs, the relatively high cost effectiveness of the cap programs compared to many of the technology-based FIP measures, and consistency with the State and District SIP planning effort.

EPA proposed cap reduction rates of 20-45 percent. Several commenters claimed this range was too high. EPA believes that imposing only minimal reductions from the affected facilities would not be equitable in light of the large reduction requirements that are needed for attainment in the South Coast. After considering the comments, reductions required of other source categories, and the overall reductions needed for attainment, EPA is finalizing a 45 percent reduction requirement from affected facilities for the VOC FIP cap program in the South Coast. For consistency with SCAQMD's not yet approved NOx RECLAIM program, EPA is also taking interim final action on a 72 percent reduction requirement from NOx sources in the South Coast. EPA will continue to encourage and support development of VOC RECLAIM in order to ensure that the FIP rule is replaced by SIP approval before the FIP rule is scheduled for implementation. EPA will work with the SCAQMD to correct the deficiencies which have been identified in the NOx RECLAIM program to ensure that

the NOx FIP cap rule is replaced in the near future.

Several commenters noted that annual caps would be more flexible and would account for seasonal and cyclical variations in emissions, while others supported the monthly caps which EPA proposed. EPA has not changed the term of the emissions caps in the final regulations because EPA believes that the monthly caps provide more certainty that the one-hour ozone NAAQS will not be exceeded.

Many commenters were concerned that the baselines do not account for equity concerns in the FIP cap programs. Such equity concerns as early reductions, clean facilities and others were raised. EPA has refined the baseline methodology by eliminating many of the equipment ratings for NOx sources and refining the applicability sections of the regulations to ensure that new sources constructed after December 31, 1990 are not included in the FIP cap programs. In addition, EPA continues to believe that the baseline methodology found in the cap regulations does take into account early reductions (e.g., those reductions other than SIP measures which occur between 1990 and 2001, including reductions as a result of compliance with CAA section 112 reduction requirements). EPA believes that the equity concerns raised are best addressed through the efforts of the State and local agencies acting consistent with the EIP rules.

Several commenters were concerned that the cap programs included sources of emissions for which caps may not be appropriate. Some of the commenters on this issue raised the

length of time needed for Food and Drug Administration approval of some new coatings and the appropriateness of further control for publicly owned treatment works (POTWs) and other sources. EPA concurs with some of these concerns but believes that by 2001, many of these source categories should and will be controlled by State and local measures. Such measures or others may be used to replace the FIP's reductions for these sources. As a result, EPA has not changed the types of sources subject to the cap programs.

Many commenters were confused by the applicability thresholds listed in the proposal's preamble and regulations. EPA has changed the applicability sections so that:

- (i) the reduction requirements clearly apply only to those sources at facilities with emissions greater than or equal to four tons per year in 2001,
- (ii) the exemption reporting requirements apply to those sources at facilities with emissions greater than or equal to two tons per year, but less than 4 tpy in 2001, and
- (iii) facilities with emissions less than 2 tpy in 2001 are not subject to the FIP cap program.

In addition, EPA has clarified that Department of Defense facilities are subject to the FIP cap program.

Several commenters asked that EPA develop a new source review mechanism for the final FIP cap program. EPA has included a new section under the applicability and specific provisions sections of the rules to address new sources. The change states

that new sources constructed after December 31, 1990 are not subject to the FIP cap program, while existing sources (as of December 31, 1990) which modify between January 1, 2001 and December 31, 2005, would have to offset emissions increases under certain conditions.

Some commenters claimed that the penalty provisions for the proposed FIP cap programs would establish inappropriate penalties. EPA does not agree. Consistent with the discussion found in the final EIP rules (see 59 FR 16708), EPA requested comment regarding the appropriate range of "pounds per violation" (see 59 FR 23327) up to 200 pounds, but received no comments on this issue. Therefore, for the reasons stated in the proposal, EPA has finalized the 50 pounds per violation increment for emissions violations in the cap program.

(3) Determination of final reduction rates. As described in EPA's proposal, a reduction range of 20 to 45 percent was proposed for the VOC cap program in the South Coast; EPA is finalizing a 45 percent reduction. In the FIP proposal, EPA estimated that the sources for which the SCAQMD is developing a VIC RECLAIM program would account for approximately 200 tpd. This estimate was based on previous inventory estimates by the SCAQMD for sources emitting greater than four tpd. EPA estimated the FIP cap program needed to achieve an 80 tpd reduction, which equated to a 40 percent reduction. Since the FIP proposal, the South Coast has released a revised inventory estimate and reduction target for the probable sources to be included in its

proposed VOC RECLAIM program. Based on this new information, EPA has revised its VOC cap program inventory from 200 to approximately 110 tpd. As a result, EPA is finalizing the maximum reduction proposed (i.e., 45 percent) for sources covered by the South Coast VOC cap program. The FIP cap program is now expected to achieve a reduction of approximately 50 tpd.

As described below in Section III.C.4.(a)(4) of this notice, EPA has not yet been able to fully approve SCAQMD's NOx RECLAIM program. As a result, EPA is finalizing a NOx cap program for the South Coast FIP area. EPA has determined that the 20 to 45 percent NOx reduction proposed would not provide sufficient reductions in the South Coast FIP area or be consistent with the reductions expected from the NOx RECLAIM program. In order to maintain consistency with RECLAIM and assure the NOx reductions needed for attainment, EPA is using an interim final rulemaking action to promulgate a NOx cap rule requiring emission reductions of 72 percent. This is not expected to have a negative impact on affected South Coast sources because similar reductions will be required from the SCAQMD's RECLAIM program which EPA expects to fully replace the South Coast NOx FIP cap rule in the near future.

(4) Implication of proposed conditional approval of South Coast NOx/SOx RECLAIM rules. In a separate rulemaking notice, EPA is proposing to conditionally approve South Coast's NOx/SOx RECLAIM program. In order to rely on the reductions achieved by NOx/SOx RECLAIM for the FIP's attainment demonstration, EPA must

have finalized its approval action by the date which this final FIP was promulgated. Because EPA is only proposing conditional approval of the NOx/SOx RECLAIM program at this time, EPA, as stated in the proposed FIP, has incorporated a NOx FIP cap program similar to that proposed for the Ventura area into the South Coast FIP. A conditional approval of NOx/SOx RECLAIM requires the State to provide EPA with a commitment prior to the final conditional approval to correct the deficiencies identified by EPA within 12 months of the publication of the final conditional approval. EPA is optimistic about the South Coast's willingness and ability to correct the deficiencies identified in the proposed conditional approval of NOx/SOx RECLAIM program. EPA therefore expects to be able to rescind the NOx FIP cap program for the South Coast long before its scheduled implementation date.

b. Comments on alternatives to the FIP cap program and EPA responses.

(1) Trading. Many commenters noted that trading should be included in the final cap regulations. EPA believes that trading is best implemented at the State or local agency level and is not prepared to implement such a program from the Federal level in the context of a FIP. In addition, EPA believes, as discussed in the proposal, that VOC trading must be carefully structured to address the issue of toxics trading. Therefore, EPA has not added a trading component to the final cap regulations.

EPA also received many alternative cap proposals which

included a trading component. Some of these proposals, notably those under development in the South Coast (i.e., VOC RECLAIM) and a proposal to use the purchase of inherently low-emitting vehicles (ILEVs) as a means to meet RACT and NSR offset provisions at stationary sources, show promise. EPA encourages the development of trading programs at the State and local level, and intends to be an active participant in the VOC RECLAIM effort.

The ILEV proposal presented by one commenter shows promise in meeting a goal of the EIP rules of early market penetration of a new cleaner technology. The ILEV proposal would grant mobile source emission reduction credits (MERCs) to those entities which purchased ILEV fleets earlier than required under regulation. The proposal would allow the use of these MERCs to meet RACT and NSR offset requirements. With appropriate refinements to conform to the EIP rules and efforts by the State, this program could be used to satisfy some FIP requirements and potentially replace a portion of the FIP cap reductions in the FIP areas. The commenter also provided EPA with regulatory language which could be used as a starting point for State and local agencies to develop such a program.

(2) Manufacturers' bubble for solvents and coatings. EPA received comments both in support of and against the manufacturers' bubble program alternative to the FIP cap program for industrial and commercial solvents and coatings. Given the concerns raised by several of the commenters regarding the

program's workability, EPA is not taking action on the manufacturers' bubble proposal. However, EPA believes that such an approach may be necessary for certain types of reduction strategies (i.e., VOC RECLAIM) to work and as such, would advocate a national labeling initiative to supplement such strategies at the local level.

(3) Other economic incentive approaches. EPA received no comments regarding the use of other economic incentive approaches with respect to replacing the cap measures.

D. Mobile Sources.

1. Programs for Light-duty Vehicles.

a. Overview of Final Rule.

Light-duty motor vehicles were the most significant contributor to all three FIP areas' VOC and NOx inventories in 1990. There are more cars and more miles driven than ever before. For this reason, CARB has already required more per unit reductions from new cars than from any other source. In fact, the reductions required are so significant that CARB predicts that, notwithstanding growth in vehicle miles traveled, cars will drop from the first to the third highest contributor to the inventory by 2010 with the programs already planned.

The light-duty sections of the FIP, like the other sections of the FIP, only supplements CARB's adopted rules in a manner consistent with them. For example, full credit is given for the following fully adopted State programs: The Low Emission Vehicle

program, the Onboard Diagnostics requirements, and Reformulated Gasoline.

CARB stated in the SIP its plans to put in place scrappage programs to take 7500 cars off the road each year at the cost of \$1000 each and to develop incentives or requirements to develop more low emission light-duty vehicles. Even assuming EPA could develop the financing mechanisms, these latter two programs would have been impossible for EPA to develop in the time permitted between when CARB finalized their SIP and the court-ordered FIP promulgation date. Thus while EPA includes a fleets program to provide some incentive for early and extra introduction of very clean technology, EPA is not finalizing these incentive programs.

CARB's SIP also outlined plans to implement an enhanced inspection and maintenance program. Because California has not yet submitted to EPA its I/M regulations, the FIPs EPA is today finalizing also contain an enhanced I/M program. The FIP I/M program, however, is designed to achieve more emissions reduction than CARB's planned program to make up any difference caused by the lack of the incentive programs and for other reasons described in section III.D.1.e below.

EPA is also finalizing restrictions on the importation of used non-California cars into California by Californians. The right of immigrants to California to bring their vehicles with them will not change.

Details on all of these programs are provided below.

b. Rationale for, and impact of, using a modified EMFAC to model baseline motor vehicle emissions and control strategy credits.

EMFAC was developed by CARB to model the emissions from highway vehicles taking into account the differences between vehicles certified to California standards and those certified to 49-state standards. CARB's BURDEN model is used in conjunction with EMFAC to convert the gram per mile outputs of EMFAC into ton per day projections using VMT estimates for the area and year of interest. These models were the basis of the emission estimates used as input to the Urban Airshed Model that was used to project the ozone carrying capacities that the FIP is designed to attain. For these reasons it would make sense to use these CARB models for calculation of the FIP baseline inventories and control strategy credits.

In order to be able to model some of the control strategies in the FIP with EMFAC, certain modifications to EMFAC7F were needed. The California Air Resources Board made those modifications necessary to model the baseline and the FIP stringent enhanced I/M program, the major FIP light-duty measure. As a result of using EMFAC for the FIP, baseline highway emission inventories for the attainment year are somewhat less than had been modeled in the FIP proposal using EPA's CALI5a model. In addition, the emission benefits of the FIP I/M program are somewhat greater in the final FIP using modified EMFAC7F in the FIP proposal.

c. Impact of Revised VMT growth rates.

This FIP uses highway emission inventories from the November 15, 1994, California SIP, which used the EMFAC7F and BURDEN7F models. Thus, the FIP uses VMT assumptions that are built into BURDEN7F. The only adjustment to these BURDEN numbers in the SIP and the FIP was to use a simple growth rate of 2.0% per year for heavy duty diesel vehicles in Sacramento.

A comparison of the VMT growth rates used in the FIP proposal versus those used in this final FIP are shown below. Thus, except for the lower heavy duty truck VMT growth in Sacramento, and the lower overall VMT growth in Ventura, this final FIP uses greater growth than in the FIP proposal.

Annual VMT Growth Rates (simple growth)

	Proposed FIP	Final FIP
South Coast	1.95%	2.34%
Ventura	3.10%	2.28%
Sacramento	3.80%	4.06%

It should be noted that the local planning organizations in the three FIP areas have been updating the VMT projections from those used in BURDEN7F and this FIP. The updated growth estimates are expected to be incorporated into BURDEN7G when it becomes available, and in some cases are expected to be lower than those of BURDEN7F.

d. Light-duty vehicle manufacturer programs.

(1) Summary of FIP Proposal.

EPA proposed the implementation of an enhanced in-use compliance program (EIUCP) to provide extra emissions reductions above and beyond the substantial reductions provided by the California LEV program and to cause in-use emissions from all new vehicles after 1999 to approach certification standards.

The proposed light-duty EIUCP was intended to encourage manufacturers to build additional durability into their emission control equipment by increasing the manufacturers' responsibility for repairing problem vehicles identified by the inspection and maintenance and recall programs. EPA proposed to allow recall of California vehicles based on a random sample of all vehicles, rather than only properly maintained vehicles, and to require manufacturers to pay for systematic I/M failures. In order to facilitate compliance with these two measures, EPA developed a composite of exhaust and evaporative hydrocarbon emissions which was intended to allow more flexibility while keeping total emissions very low. See Appendix I of the proposal for more details on this program.

In addition to the above, EPA also proposed a quicker phase-in of LEV and ULEV medium-duty vehicles than CARB had proposed. Finally, EPA also proposed an enhanced Inherently Low Emission Vehicle (ILEV) fleet program as part of the EIUCP. This program would require in the South Coast that own 10 or more centrally fueled vehicles to purchase ILEVs as a fraction of their new

vehicle purchases. This program would require that a fraction of the post-1998 model year vehicles purchased by fleets in the South Coast area having 10 or more vehicles which currently are, or are capable of, being centrally fueled even if they are not centrally fueled at a central location.

(2) Comments and Technical Analysis.

EPA received numerous comments expressing opposition to the EIUCP. Several auto manufacturers objected to the composite NMHC standard, asserting that it constitutes a second set of standards in addition to CARB's NMOG standards. They stated that this additional complexity is unnecessary and provides no additional air quality benefit over the California LEV program. Several commenters stated that giving manufacturers I/M repair responsibility would provide a disincentive for vehicle owners to maintain their vehicles or that the program provides no benefits beyond the LEV and enhanced I/M programs. CARB submitted a study showing that testing vehicles in their condition as received was unlikely to improve the effectiveness of recall testing. Others suggested that the EIUCP falls outside of EPA's FIP authority under section 110 of the Clean Air Act or that it violates the recall provisions of section 207 of the Act.

While EPA believes that by standing in the shoes of the State the Agency has the requisite legal authority to implement the enhanced in-use compliance program, EPA has decided that it is not necessary to adopt the enhanced durability provisions of

the EIUCP for light-duty vehicles in the FIP. EPA decided to remove the enhanced durability provisions of the light-duty EIUCP from the FIP based on a determination, made after the FIP proposal, that the LEV program -- with its reliance on advanced emission control technologies, clean gasoline, and an on-board diagnostic (OBD) system -- in combination with enhanced I/M will provide similar emission reductions to those achieved by the proposal.³⁸ California's EMFAC model is consistent with this assessment and therefore CARB did not include programs to enhance in use durability (beyond enhanced I/M) in its SIP. As a result of EPA's determination regarding the emission benefits of California's own program, EPA believes its twin goals of achieving clean air at the least cost and of keeping California in charge of its air quality planning are best served by not finalizing the EIUCP provisions.

(3) FIP Final Rule Requirements.

Section III.D.1.i discusses ILEV fleets, which is the only element of the proposed light-duty EIUCP that is being retained in this final FIP action. Some of the medium-duty provisions of the proposed EIUCP program are being retained as discussed in section III.D.2. The proposed enhanced in-use compliance program for heavy-duty vehicles is discussed in section III.D.3.

The ILEV fleet provision is the one light-duty aspect of EIUCP that will be retained. It is discussed in section

³⁸ See Memo from Phil Lorang to EPA Air Directors dated April 8, 1994.

III.D.1.i. The revised medium-duty phase-in is also being retained.

e. Enhanced Inspection/Maintenance.

(1) Summary of FIP Proposal.

EPA proposed an enhanced I/M program in all FIP areas in order to reduce emissions from the majority of vehicles in California which have outlasted their emissions warranties. At the time of the proposal, California had an I/M system known as Smog Check. The "California I/M Review Committee's Fourth Report to the Legislature" had concluded that the current program was yielding less than one-half the potential emission reduction benefits of a properly implemented program but no decision had been reached about the necessary improvements. In compliance with the Clean Air Act, California had committed in November 1992, to develop an improved program in one year. But by December 1993, CARB did not have implementing legislation and had not scheduled a hearing on its program. As a result, EPA issued a deficiency finding.

Without program improvements to ensure in-use cars and trucks are well maintained, attainment would be impossible in the FIP areas. Therefore, EPA proposed a program designed to provide the greatest emissions reductions and most customer convenience compatible with a federally implementable program.

After the FIP proposal was signed, Cal/EPA (of which CARB is a part) and EPA entered into a Memorandum of Agreement regarding

development of California's enhanced I/M program and legislation allowing the MOA's provisions to be adopted was passed. As part of that agreement California agreed to submit to EPA adopted regulations implementing an enhanced I/M program by June 1995. It was agreed that a program satisfying EPA's performance standard for I/M would be sufficient to comply with the Act. The June date was necessary to allow time to perform testing to determine the most cost effective system for California.

Unfortunately, the June date is after the Court ordered deadline for this FIP final rule. Since an adopted I/M program is necessary in order to develop an attainment demonstration, EPA is forced to finalize its proposal at this time. However, EPA fully expects that California's program will overtake and replace EPA's I/M effort before actual implementation.

This I/M program represents EPA's only effort at reducing per vehicle in use emissions in the FIP and as such attempts to achieve a very significant reduction, beyond that of the performance standard. California has also indicated interest in achieving reductions from in use vehicles through scrappage of the oldest vehicles. Such a program may be quite appropriate for California with its mild weather and therefore high vehicle survival rate. EPA is unable to implement a scrappage program due to its cost, among other reasons. EPA is however, very interested in California replacements for the FIP I/M program which achieve equal emissions reductions through any means deemed appropriate by the State.

A description of the proposed FIP I/M program, a summary of comments and new information and a description of the rule finalized today follows.

EPA proposed a centralized, test-only enhanced I/M program for the FIP areas, operated by contractors and consisting of the IM240 tailpipe test, purge and pressure testing, visual anti-tampering checks of the air pump and positive crankcase ventilation valve (PCV), and interrogation of the onboard diagnostic (OBD) computer on 1994 and later model year vehicles. The proposed I/M program covered model year 1966-1998 gasoline-fueled vehicles, excluding motorcycles but including heavy-duty vehicles up to 19,500 pounds Gross Vehicle Weight Rating (GVWR). It also included 1999 and newer vehicles of all fuel types, excluding motorcycles but including heavy duty vehicles to 14,000 pounds GVWR. Biennial testing was proposed to start in January 1997. The proposal also contained provisions for a cost waiver after \$450 is spent on relevant emission repairs and the use of remote sensing (RSD) to identify gross emitters for possible out-of-cycle repairs. EPA proposed a series of increasingly stringent cutpoints for successive test cycles on Tier 0 vehicles in order to spread out the occurrence of failed vehicles over the successive test cycles, while identifying the highest emitting vehicles as soon as possible. Proposed first and second cycle cutpoints for Tier I, TLEV, LEV, and ULEV vehicles in the pre-1999 model year group were more stringent than the cutpoints for Tier 0 vehicles due to the lower certification standards for

these vehicles. In the proposal, model year 1999 and newer vehicles were addressed as part of the discussion of the enhanced in-use compliance program (see section III.D.1.d).

(2) Comments and Technical Analysis.

CARB commented that the State efforts to date (described above) were sufficient to replace the FIP enhanced I/M proposal. As described in Section II.B.I. of this notice and acknowledged by CARB in its SIP, EPA has been directed by the U.S. Court of Appeals that the Clean Air Act forbids approval of I/M programs without fully enforceable regulations. California has not yet developed or submitted its regulations and therefore EPA cannot yet approve the work CARB is doing as a replacement at this time.

A few commenters asserted that centralized I/M will have adverse economic impacts on the auto repair and service industry. As noted above, EPA expects that California's hybrid program will ultimately replace the FIP; this comment is not germane to CARB's program. However, EPA analyses done for the I/M Program Final Rule and a study done for the American Lung Association anticipate a net job gain as a result of centralized I/M testing. These studies indicate that the loss of I/M testing opportunities for individual businesses will be offset by the increase in repair activity resulting from the more stringent I/M procedures. This activity will also create additional demand for parts. According to these studies, employment at inspection stations is expected to stimulate the creation of other jobs as well, leading to increases in the number of construction, direct manufacturing,

and service jobs.

An engine manufacturer commented that I/M for heavy-duty vehicles is unnecessary because they are usually well-maintained to avoid performance degradation, which also has a beneficial effect on emissions. However, vehicle performance is not always an indicator of emission control performance. In addition, current heavy-duty vehicles are being equipped with new emission control technologies, such as catalysts, which are more prone to performance degradation. EPA believes that in-use emissions testing is necessary to ensure optimum effectiveness of these emission controls. CARB also plans to test heavy-duty gasoline vehicles in its program.

In addition to reviewing comments on the proposed FIP I/M program, EPA has conducted its own additional analysis, which has indicated the need for changes in some elements of the final FIP. The changes are described below.

EPA's review of the lead time required for implementing the I/M contracts and the timeline of CARB's efforts has resulted in a decision to delay the program start date six months until July 1997. This change will provide a more realistic time frame for getting contractors in place, if necessary, while still allowing the benefits of the I/M testing to be realized within the necessary time period.

EPA is expanding the vehicle coverage of the FIP enhanced I/M program to include all gasoline-fueled heavy-duty vehicles, regardless of weight. This expansion was necessary to replace

reductions lost when the heavy-duty standards were adjusted to match CARB's program proposed and to ensure proper functioning of these engines as described above. (For the discussion of heavy-duty I/M, see section III.D.3.) As a result of this change, all gasoline-fueled heavy-duty vehicles through model year 2001 will be subject to all aspects, exhaust and evaporative, of the enhanced I/M program. Beginning with model year 2002, heavy duty gasoline-fueled vehicles are subject to only the evaporative side of the FIP's I/M program unless they are certified to have inherently low evaporative emissions, in which case they can receive an I/M waiver. Diesel-fueled vehicles have virtually no evaporative emissions and are therefore exempt from evaporative I/M testing. CARB has indicated an intent to include heavy-duty vehicles in its program as well, but the exact details are unclear at this time. The timing of the FIP, as described below, should permit smooth replacement.

To accommodate the additional heavy-duty vehicles, EPA is supplementing the proposed I/M cutpoints with new cutpoints for heavy-duty vehicles larger than 10,000 pounds GVWR. These cutpoints were developed using EPA's IM240 cutpoint-to-certification standard ratio for light-duty vehicles.

Since the additional heavy-duty vehicles will put new pressure on I/M testing stations, EPA believes that it is prudent to delay the start of I/M testing on heavy-duty vehicles with a gross vehicle weight of greater than 19,500 pounds until testing on the other vehicles is well established. Consequently, I/M

testing of gasoline-fueled heavy duty vehicles greater than 19,500 pounds GVWR is required two years after the start of initial testing on light-duty, medium duty, and the smaller heavy duty vehicles. This phase-in will allow the contractors to adequately prepare for the additional vehicles, including installation or modification of testing equipment, so that disruptions to the established vehicle flow are minimized.

(3) FIP Final Rule Requirements.

EPA is promulgating, with revisions, the enhanced I/M program contained in the FIP proposal. The elements of the FIP rule are described below. Where known, the elements of the planned SIP program are also discussed.

(a) Applicability -- The enhanced I/M program applies to all vehicles registered, or required to be registered, in the FIP counties listed in Table IM-1 and to vehicles in commercial fleets that are primarily operated in these same counties. Vehicles that are operated on Federal installations located within the I/M program area must also comply with the I/M requirements regardless of their registration status.

Table IM - I -- Counties Included in the Enhanced I/M Program

Sacramento Area	Ventura	South Coast
Sacramento	Ventura	Los Angeles
Yolo		Orange
Placer (part)		Riverside (part)
Solano		San Bernardino (part)

Sutter

El Dorado (part)

Note: The portions of Riverside, San Bernardino, Placer, and El Dorado counties to be covered by the FIP I/M program would be the same as are currently covered by the State's Smog Check program.

(b) Enforcement -- Under this final FIP action, the Secretary of State of California, the California Department of Motor Vehicles, its employees, and any other persons representing the State of California are prohibited from registering any vehicle subject to FIP requirements that does not present a valid certificate of compliance with, or a valid waiver from, the FIP's I/M program requirements. This provision merely expands current California law to cover a FIP I/M program if necessary. At Federal installations, where vehicles may not have California registration, the Federal installation is required to maintain evidence of compliance with the enhanced I/M program requirements.

DMV employees or other State representatives suspected of violating the FIP I/M requirement would be subject to prosecution under Federal law and, if found guilty, could be subject to civil penalties up to \$25,000 per violation. Each instance of unlawful registration would be considered a separate offense.

Motorists who are late for either regularly scheduled tests or who failed to comply with an out-of-cycle test required because the vehicle was identified by a remote sensing unit (see below), will be assessed a late fee at the rate of \$10 per week late.

(c) Network Type -- EPA is promulgating a centralized, test-only network for each FIP area operated by private entities under a legal agreement with the federal government. Program oversight will be facilitated through the award of a separate contract to provide for the collection of data in the form of overt and covert auditing of the testing contractor's sites and performance. The test provider(s) will be reimbursed through the collection of a fee paid directly to the test provider(s) by motorists at the time of testing. As described above, EPA is delaying implementation of its program to facilitate replacement by California's own program. EPA will work with the State and any potential contractors to ensure that no liability accrues to any party based on the replacement.

(d) Test Type and Procedure -- The final FIP enhanced I/M test procedures consist of the IM240 tailpipe test, purge and pressure testing, visual anti-tampering checks of the air pump and PCV valve, and interrogation of the onboard diagnostic (OBD) computer on vehicles so equipped beginning with the 1994 model year. California also plans to include these tests in its program, though it is investigating whether a different tailpipe test might be as effective.

Beginning with model year 2002, heavy duty trucks will be subject to only the evaporative emissions I/M tests unless they are certified to have inherently low evaporative emissions, in which case they can receive an I/M waiver.

All of the FIP I/M program's inspections will be conducted

in compliance with the test procedure guidance developed and issued by EPA in conjunction with the I/M rule. The IM240 standards will be set at the increasingly more stringent first, second, and third cycle gram-per-mile cutpoints for HC, CO, and NOx provided in Appendix B.

(e) Vehicle Coverage and Test Frequency -- The final FIP enhanced I/M program covers all model year 1966-1998 gasoline-fueled vehicles, including all heavy duty vehicles of all weight classes but excluding motorcycles. (The purge/ pressure and visual inspections will be performed on all model year 1971 and newer vehicles.) The final FIP I/M program also covers all 1999 and newer vehicles of all fuel types, including all heavy duty vehicles regardless of vehicle weight but excluding motorcycles.

Under the final FIP I/M program, testing will be conducted biennially in the FIP areas with new vehicles being exempt until the second anniversary of the initial registration date. CARB is also planning this coverage.

(f) Waivers and Special Warranty Protection -- The final FIP I/M program allows vehicle owners to apply for a cost waiver after they have spent at least \$450, adjusted annually for inflation, on relevant emission control repairs. The \$450 will not include costs related to the repair of tampering-related defects or emission control components the servicing of which is covered by an unexpired warranty. This waiver policy is included in the Act; California is also implementing it.

The test provider(s) will be responsible for issuing such

waivers and for conducting a visual inspection to confirm that all claimed repairs have, in fact, been made. Motorists on public assistance will be able to apply for a one-time, non-renewable time extension on making repairs, not to exceed one full test cycle. Only one such time extension will be granted per the lifetime of a vehicle. California is looking for ways to help lower income people afford the repairs.

Test providers will also be responsible for issuing a permanent waiver for heavy duty vehicles certified to have inherently low evaporative emissions.

(g) Convenience Issues -- EPA is establishing minimum convenience requirements to be included in any legal agreements with the test provider(s) if it becomes necessary to implement the FIP if it becomes necessary to implement the FIP I/M program. The test provider(s) will be required to schedule I/M tests on a weekly basis to reduce the impact of an end-of-the-month rush, and wait times between entering a test station queue and the initiation of actual testing will not be allowed to exceed 15 minutes on average. In addition, test stations will be sited such that 80 percent of all subject motorists are within a five mile radius of a test station and such that 95 percent of all motorists are within 10 miles of a test station. The test provider(s) will also be required to offer "valet testing" for a reasonable fee. This option will allow motorists to have their vehicles picked up for testing from their homes, work places, etc., and returned.

(h) Onroad Testing -- As part of the final FIP I/M program, remote sensing devices (RSD) will be used to identify gross emitters for possible out-of-cycle repairs. The I/M test provider(s) will perform this onroad testing, which will cover a larger percentage of the fleet than the minimum required of state-adopted enhanced I/M programs under the I/M rule (i.e., approximately 10 percent). Owners of vehicles that fail the RSD check will be notified of the failure by registered mail and will be required to report for an out-of-cycle confirmatory test at a test-only site. Should the vehicle fail this confirmatory test, the owner will be responsible for the procurement of necessary repairs and will be required to submit the vehicle for retesting. The owner will have an opportunity to apply for a waiver, but only after meeting all the same criteria that would apply during the regular testing cycle. Vehicle owners who do not respond to the notice of RSD failure will be assessed a late penalty at the time of their next scheduled test. The late penalty will be the same as that charged for missing a regularly scheduled test (i.e., \$10 per week late).

(i) Program Start Date -- The FIP I/M program will initiate testing beginning in July 1997 for all of the subject light-duty and medium duty vehicles and those heavy vehicles with a gross vehicle weight through 19,500 pounds. Testing on the subject heavy-duty vehicle population greater than 19,500 GVWR will begin in July 1999.

f. On-highway Motorcycles.

Provisions for on-highway motorcycles are contained in section III.D.4.b. Because engines used in nonroad recreational vehicles such as all terrain vehicles and dirt bikes are similar to those used in on-highway motorcycles, all control strategies for these engines are contained in the section referenced in the preceding sentence.

g. Parking Cash Out.

As noted in the proposal, many employers offer free or subsidized parking spaces to their employees as a tax-exempt benefit. As part of his *Climate Change Action Plan*, President Clinton proposed a change in the tax law to encourage employers who offer tax-exempt parking benefits to also offer a Parking Cash Out alternative. The goal of the proposed FIP language was to incorporate Parking Cash Out for the FIP areas in a manner consistent with EPA authority. The FIP proposal, of course, could not include a modification of the tax code, but it did aim to take credit for the expected implementation of the President's proposal which was anticipated to be enacted by the time the FIP became final.

Those anticipated tax code changes have not yet been enacted. Therefore, EPA withdraws the parking cash out program from the final FIP. The emission reductions credited to the Parking Cash Out program will not be lost, however, as it was assumed in the proposal that the Parking Cash Out emission

reductions would overlap the reductions also found in the Employee Commute Options program.

Since the State has requested reclassification to Severe for Sacramento, EPA is not including the ECO program in the final FIP. Having granted the State's request, the requirement to implement an ECO program is now clearly the State's responsibility. Thus the reductions credited to parking cash out and ECO will be achieved through the Sacramento ECO programs now in the process of being adopted. The ECO programs in Ventura and the South Coast are currently being implemented.

h. Importation of Light-Duty Vehicles Into California.

(1) Summary of proposal. EPA proposed to restrict California residents from importing 49-state vehicles by prohibiting such vehicles from being registered for the first time in the State by California residents. EPA also proposed to prohibit California residents from owning and keeping a car in California that was currently registered in another State. As an exception to this prohibition, EPA proposed to allow recent immigrants to the State to register a previously owned vehicles from another State. EPA also requested comment on methods for providing exemptions for historic and collector vehicles.

(2) Summary of major comments, responses, and changes to the measure. Several commenters requested specific exclusions from the prohibition. Law enforcement officials stated that current undercover fleets make use of court-awarded vehicles

which are frequently out-of-state vehicles. A commenter suggested that the prohibition be limited to vehicles which are more than two or three years old. The Department of Defense (DOD) requested that current California exclusions affecting vehicles of military personnel be preserved.

The Department of Defense also requested that vehicles brought into California for storage as part of the Prepositioned War Reserve Material Stock be excluded from the importation restrictions. These vehicles are operated only for maintenance and preparation for deployment in time of crisis.

The State of California submitted excerpts from the Health and Safety Code which describe the current California laws which restrict the registration and operation of non-California certified motor vehicles, including special provisions for vehicles of historic value. EPA believes that exclusions for historic vehicles, vehicles belonging to military personnel, vehicles that are part of the Prepositioned War Reserve Material Stock, and those used for law enforcement purposes are appropriate and would not represent a significant loss of emission reduction benefits. However, EPA is concerned that an exclusion for vehicles which are two or three years old would directly affect the desired impact. As a result of the California LEV program, the difference in emission levels between California-certified and federally-certified light-duty vehicles is expected to increase over time. Moreover, if California- and federally-certified vehicles further diverge in design and in

cost, there may be an increased incentive for California residents to purchase young 49-state vehicles which have exceeded 7500 miles of operation, even though there would be a one-time smog impact fee of \$300.

Comments received on the proposal indicated some confusion about the meaning of California resident. EPA intends the term "California resident" to include corporations, companies, partnerships, etc. and government entities. Consequently, the requirements of this section apply to businesses and government installations, including military installations, as well as to private individuals.

Government vehicles brought into California on a temporary or emergency basis, vehicles that have been excluded from or that have been granted a national security exemption from federal emission standards are excluded from these requirements.

EPA has modified the rule to include the exclusions mentioned in the preceding paragraphs of this section. EPA has also clarified the term "California resident."

(3) Future rulemaking. The California Air Resources Board did not indicate in its November 1994 SIP submittal that it intended to pursue a similar prohibition against the registration of 49-state vehicles. However, the measure is supported by the local air districts, and the State has indicated its interest in addressing the impacts of non-LEV vehicles on California air quality. Therefore, a similar prohibition or other market mechanism to reduce emissions from non-LEV vehicles will likely

be submitted in future revisions to the SIP.

i. Fleets.

(1) Summary of FIP Proposal.

EPA proposed a fleet program which would require that a fraction of vehicles acquired by certain fleets meet Inherently Low Emission Vehicle (ILEV) emission requirements. Specifically, EPA proposed that 50 percent of all light duty vehicles (LDVs), light duty trucks (LDTs), and medium duty vehicles (MDVs) purchased in 1999 by covered fleet operators meet the ILEV emission standard. This proportion would increase to 70 percent of LDVs, LDTs, and MDVs purchased in each calendar year thereafter.

The proposed ILEV fleet program was structured to be very similar to the Clean Air Act Clean Fuel Fleet (CFF) program in terms of fleets covered, phase-in provisions, and treatment of credits. EPA proposed that the definitions promulgated for the CFF program, including definitions for "covered fleet operator," "centrally fueled," and "capable of being centrally fueled," apply to this ILEV fleet program (40 CFR 88.302-94). In addition, the types of fleet vehicles which are exempted from the CFF program by Title II, Part C of the Clean Air Act (e.g., law enforcement and emergency vehicles or vehicles rented to the public) were proposed to also be exempted in the ILEV fleet program. The ILEV fleet program was proposed to apply only in the South Coast area; EPA requested comment on expanding the program to the other two FIP areas. While HDVs were not included

in the proposed ILEV fleet program, the proposed evaporative emissions standard for HDVs described in Section III.D.3. would have had the effect of requiring all new HDVs (not just those in fleets) to have very low evaporative, HC and NOx emissions.

As a part of the ILEV fleet program, EPA also proposed a system of credits similar to the CFF credit provisions. In the proposed credit system, fleet operators that exceeded the requirements of the program by purchasing ILEVs before the effective date of the requirements, or by purchasing more ILEVs than required, or by purchasing ILEVs to replace exempted vehicles, would earn credits that could be held, sold, or used in lieu of required ILEV purchases.

EPA proposed that the FIP fleet program be based on the ILEV requirement for several reasons. The ILEV emission standard was promulgated by EPA in 1993 (58 FR 11888) to distinguish those low emission vehicle (LEVs) and ultra low emission vehicles (ULEVs) that have little or no evaporative emissions. Because gasoline vehicles -- or bi-fuel vehicles carrying gasoline and flexible fuel vehicles using gasoline mixtures -- require sound evaporative and refueling emission control systems for evaporative emissions to be minimized, such vehicles are subject to large increases in emissions if these systems become dysfunctional. Even under the best of enforcement programs, it is likely that a number of vehicles will be operating with malfunctioning vapor controls. Since vehicles meeting the strict ILEV evaporative requirements have little or no evaporative

emissions even if evaporative controls malfunction, their inherently low overall emissions can contribute to significant incremental emission benefits. EPA estimates that for California gasoline vehicles with exhaust emissions in the LEV/ULEV range, average vapor emissions represent more than half of the total hydrocarbon emissions. Thus, EPA believes that vehicles which are inherently low in vapor emissions will have emissions less than half those of other LEVs and ULEVs.

(2) Summary of Comments.

EPA received comment on the proposed ILEV fleet program from a wide variety of national and State fleets and fleet organizations, automobile manufacturers, natural gas companies, an oil company, and several other organizations and associations. A detailed summary and analysis of these comments is included in the technical support document. Some commenters raised concerns about the limited availability and selection of ILEVs, fueling infrastructure needs, limited additional emissions benefits and excessive costs associated with the program. Other commenters supported the ILEV fleet program for its potential to generate significant emissions reductions in the FIP areas.

(3) FIP Final Rule Requirements.

Today's notice promulgates the ILEV fleet program largely as proposed. The program will require that a specified fraction of vehicles acquired by certain fleets meet the ILEV evaporative emission requirements. The ILEV fleet program applies in the South Coast and Ventura FIP areas. In these areas, 50 percent of

LDVs and LDTs up to 6000 lbs GVWR newly acquired by covered fleet operators in 1999, and 70 percent in each subsequent calendar year, are required to meet the light-duty ILEV evaporative emission requirements of 40 CFR 88.311-93. For MDVs and HDVs up to 26,000 lbs GVWR, 50 percent of vehicles newly acquired by covered fleet operators in 2000 and each subsequent calendar year are required to meet the heavy-duty ILEV evaporative emission requirements of 40 CFR 88.311-93. In addition, all LDVs and LDTs, including ILEVs, must meet the existing California exhaust emission requirements. All MDVs and HDVs, including ILEVs, must meet the federal FIP exhaust emissions requirements described in the following sections of this preamble.

The program finalized today differs from the proposed program in four ways which EPA believes will facilitate its implementation by manufacturers (and aftermarket converters) and by fleets. First, the ILEV fleet vehicles will not be required to have unique exhaust emission levels given the stringent exhaust emission standards already applicable. As a result, the process of qualifying vehicles for the ILEV fleet program has been simplified.

Second, EPA has delayed the effective date of the fleet acquisition requirements of the ILEV fleet program for MDVs from 1999 to 2000 to provide more time for vehicle makers to certify a variety of engine families in those weight classes to meet ILEV evaporative requirements.

Third, the final program reduces the maximum required

acquisition percentage to 70 percent to 50 percent for all covered medium duty vehicles in all model years. The 50 percent maximum purchase requirement recognizes that there are currently many fewer medium duty and heavy duty ILEV engine families to select from than light duty passenger car and light duty truck ILEV engine families.

Fourth, although the ILEV fleet program was proposed to cover only light duty passenger cars, light duty trucks and medium duty vehicles, this final rule also includes heavy duty vehicles up to 26,000 lbs GVWR in the ILEV fleet program. As described in Section III.D.3., EPA proposed but is not promulgating provisions for all heavy duty trucks and buses which would have effectively required all new HDVs to have inherently low evaporative emissions. Instead EPA is finalizing a relaxed heavy duty standards. By today extending the ILEV fleet program to heavy duty vehicles, EPA is maintaining the benefits of a low evaporative emissions requirement on some new acquisitions of certain fleet HDVs.

In general, the ILEV fleet program, like the CFF program, applies to fleets of 10 or more vehicles which are or could be centrally fueled 100 percent of the time. For simplicity, covered fleet operators may at their option base their acquisition requirements on all newly-acquired vehicles, no matter how they are fueled. Alternatively, operators may omit vehicles which are not capable of central fueling 100 percent of the time from counting in the program by demonstrating this

fact. This demonstration involves periodic recording of the operational patterns of a representative portion of the fleet.

Each California fleet operator which operates any vehicles in the three areas covered by the ILEV fleet program is required to make a short annual report to EPA of basic data including fleet size, vehicle fueling characteristics, purchase plans, and requests for credits to be issued or redeemed. Violations of the ILEV fleet program include failure to report required data in an accurate and timely manner, failure to acquire the required number of ILEVs (or redeem an equivalent number of credits), misrepresentation for the purpose of receiving credits, and the altering or counterfeiting of credit documents. A person willfully violating the provisions of the ILEV fleet program is subject to civil penalties of not more than \$25,000, the same penalty applied by the Clean Air Act to the CFF program.

EPA believes that California has the authority to adopt a program like the ILEV fleet program in its SIP. EPA is promulgating the ILEV fleet program under its authority under Section 110(c) of the Act to stand in the shoes of the State when promulgating a Federal Implementation Plan. The ILEV fleet program is not an emissions standard that applies to certain fleet operators. Further, fleet operators can comply with the purchase requirement by converting existing vehicles to ILEVs. Similar reductions may be achieved through other measures. For example, California's November 1994 SIP submission included in section M2 a requirement for new light-duty technology projected

to result in reductions of 10 tons per day of ROG and 15 tons per day of NOx. Also, CARB has committed to pursuing requirements for new heavy-duty technology that would result in an additional 2 tons per day of NOx reduction. Programs such as these may supplant the FIP ILEV program once adopted by the State and approved by EPA.

2. Programs for Medium-duty Vehicles.

a. Summary of California's Current Requirements. Starting in 1995, CARB's medium duty vehicle (MDV) category includes vehicles with a gross vehicle weight rating (GVWR) between 6,000 and 14,000 pounds not otherwise qualifying as light-duty trucks. CARB has adopted Tier 1, LEV and ULEV standards for five sub-categories of MDVs based on the vehicle's test weight (the average of curb weight and GVWR). Table III.D.2.a-1 summarizes CARB's Tier 1, LEV and ULEV standards for two of the five sub-categories of MDVs.

Table III.D.2.a-1
MDV Standards under CARB's Low-emission Vehicle Program

Test Weight (lbs)	Vehicle Category	NOx (grams/mile)		NMOG ¹ (grams/mile)	
		50k mile	120k mile	50k mile	120k mile
3751-5750	Tier 1	0.7	0.98	0.32	0.46
	LEV	0.7	1.0	0.160	0.230
	ULEV	0.4	0.5	0.100	0.143
5751-8500	Tier 1	1.1	1.53	0.39	0.56
	LEV	1.1	1.5	0.195	0.280

	ULEV	0.6	0.8	0.117	0.167
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1 - The Tier 1 standards are non-methane hydrocarbon (NMHC) standards

Under CARB's current regulations for the low emission vehicle program, the LEV and ULEV standards are to be phased-in over the schedule contained in Table III.D.2.a-2. For model years 1998 through 2000, the remaining percentage of MDVs must meet the Tier 1 standards.

Table III.D.2.a-2
Phase-in Schedule for MDV Standards
Under CARB's Current Regulations

Model Year	% LEVs	% ULEVs
1998	25	2
1999	50	2
2000	75	2
2001	95	5
2002	90	10
2003 and later	85	15

Under CARB's regulations, manufacturers may elect to certify diesel and incomplete MDVs greater than 8,500 lbs GVWR to engine-based standards. CARB's optional engine-based requirements for MDVs include a combined NOx and NMHC standard of 3.5 grams per brake horsepower-hour (g/bhp-hr) for LEVs and 2.5 g/bhp-hr for ULEVs. Small volume manufacturers are permitted to delay

implementation of LEVs until 2003 and at that time to produce all LEVs.

b. Summary of FIP proposal. In the FIP proposal, EPA proposed more stringent requirements for MDVs compared to CARB's current regulations for MDVs. First, EPA proposed NOx standards and composite NMHC (exhaust plus evaporative hydrocarbon emissions) standards for two types of MDVs, "transitional" MDVs and "enhanced in-use" MDVs. For NOx, the proposed "transitional" and "enhanced in-use" MDV standards were the same as CARB's MDV LEV and ULEV standards, respectively. For composite NMHC, the proposed "transitional" and "enhanced in-use" MDV standards were roughly equivalent to CARB's MDV LEV and ULEV exhaust standards, respectively, coupled with the applicable evaporative emission standards. Overall, the proposed standards were meant to provide the same level of control as the standards proposed in the FIP for heavier LDTs. EPA expected that MDVs would meet the standards by applying the same type of emission control technologies used to meet CARB's LEV and ULEV standards for LDVs and LDTs.

Second, EPA proposed a two year phase-in schedule that would require all MDVs to meet the "enhanced in-use" standards (i.e., standards roughly equivalent to CARB's MDV ULEV standards) in the year 2000. In 1999, 75 percent of MDVs would be required to meet the "enhanced in-use" standards, whereas the remaining 25 percent could meet the "transitional" standards.

In addition, EPA proposed an engine-based certification

option for diesel and incomplete vehicle engines used in MDVs greater than 8,500 pounds. Such engines would have to comply with the heavy-duty engine (HDE) provisions contained in the FIP proposal.

c. Comments and Technical Analysis. The main comments on the MDV provisions of the FIP proposal came from vehicle manufacturers and covered four issues. First, manufacturers commented that CARB's current requirements for MDVs were already comparable to CARB's requirements for LDVs and LDTs and pointed to CARB documents to support their position. Second, manufacturers commented that the proposed ULEV-based standards were infeasible in the time frame proposed in the FIP and that ULEV technology for diesel and gasoline MDVs would not be ready until 2003 at the earliest. Third, manufacturers commented that EPA should retain CARB's current engine-based standards for MDVs certified under the engine-based option and not require them to meet the HDE standards proposed in the FIP. Finally, one manufacturer noted that EPA should provide small volume manufacturers with more time to comply with the standards as CARB currently allows under its program.

Since EPA proposed the FIPs, CARB submitted a 1994 ozone attainment SIP that presents a plan for more stringent ULEV sales requirements for MDVs than currently required under CARB's low-emissions vehicle program. Table III.D.2.a-3 contains the revised phase-in schedule for MDVs relied upon in California's SIP. (For the 1998 and 1999 model years, the remaining vehicles

would have to comply with the Tier 1 standards.)

Table III.D.2.a-3
Phase-in Schedule for MDV Standards
Relied Upon in California's SIP

Model Year	% LEVs	% ULEVs
1998	10	10
1999	25	25
2000	50	50
2001	25	75
2002 and later	0	100

California noted in its SIP that the enhanced ULEV sales requirements for MDVs are based on the expectation that cost-effective gasoline engine technologies developed for LDVs will be applied to MDVs.

In response to manufacturers' comments regarding the stringency of CARB's current MDV standards, EPA performed a technical analysis of CARB's low emission vehicle program standards. EPA compared the stringency of CARB's MDV ULEV standards (for all five subcategories of MDVs) and CARB's heavier LDT LEV standards.³⁹ The analysis attempts to account for the differences in weight and fuel consumption of the different

³⁹ EPA's comparison of the relative stringency of CARB's medium-duty and light-duty standards under the low-emission vehicle program is contained in the Technical Support Document for today's action.

vehicle categories and the effect that these parameters have on NOx and NMHC emissions. The analysis indicates that the medium duty vehicle ULEV standards for both NOx and NMHC are essentially equivalent in stringency to the LDT LEV standards. This finding is consistent with the approach taken in the FIP proposal and California's SIP, both of which contain higher fractions of medium-duty ULEVs than currently required under CARB's regulations for the low-emission vehicle program. EPA and CARB agree with the manufacturers, however, that the technology should be developed first for the higher volume light-duty vehicles and later applied to medium-duty vehicles due to the economies of scale.

d. Legal Authority for FIP MDV Standards. As explained above in section III.A, in promulgating a FIP under section 110(c) EPA may take any actions that the State could take. Section 209 of the CAA provides that California is not preempted from adopting and implementing a motor vehicle emissions control program provided its program satisfies the criteria of section 209(b). Therefore, EPA believes that it, standing in California's shoes in the context of a FIP, may adopt a motor vehicle program or supplement California's own motor vehicle program provided that EPA's actions would satisfy the criteria of section 209(b) for a waiver of federal preemption if California itself were taking such actions. Section 209(b) provides that EPA is to grant California a waiver of preemption if the State determines that its standards "will be, in the aggregate, at

least as protective of public health and welfare as applicable federal standards."

Section 209(b) further provides that no waiver is to be granted if EPA finds that (A) the determination of the State that the standards are, in the aggregate, at least as protective of public health and welfare as the otherwise applicable federal standards is arbitrary and capricious, (B) State standards are not needed to meet compelling and extraordinary conditions, or (C) the State standards and accompanying enforcement procedures are not consistent with section 202(a). EPA has interpreted the consistency criterion as meaning that California motor vehicle standards and accompanying enforcement procedures must satisfy the leadtime requirements of section 202(a)--that they be technologically feasible within the leadtime provided, taking into account the cost of compliance--and not impose inconsistent certification test procedure requirements such that the same vehicle could not be used to comply with both State and Federal certification requirements (see, e.g., 43 FR 32182 (July 25, 1978), 40 FR 30131 (July 18, 1975), 43 FR 1839 (January 12, 1978)).

As explained earlier in this notice (and explained in more detail in the technical support document), EPA does not believe that its authority under section 110(c) in promulgating a FIP is affected by limitations in Title II on its Title II authority. In promulgating the FIP, EPA is not acting pursuant to its Title II authority, but is standing in the shoes of California and has

the authority to take whatever actions California itself could. EPA also believes that in its role in promulgating a FIP, it is entirely appropriate to apply the criteria of section 209 to the mobile source programs in the FIP as those criteria would apply to California, the State whose shoes EPA is standing in for this FIP. Thus, EPA disagrees with those commenters who suggested that provisions of Title II override EPA's authority under section 110(c) and with those who contended that it was absurd or inappropriate to apply the criteria of section 209 in this context.

EPA believes that the medium-duty vehicle program promulgated in this final action satisfies the section 209 waiver criteria. Thus, California could undertake the medium-duty vehicle and engine program described below, and, therefore, EPA has authority under section 110(c) to promulgate the program.

With respect to the protectiveness of the standards, the promulgated standards are at least as protective as the otherwise applicable federal standards (e.g., the generally applicable NOx and HC standards in the case of the vehicles and engines covered by the medium-duty vehicle program). Indeed, the standards are at least as stringent as the comparable standards that California has already adopted and for which waivers have already been granted.

With respect to the need to meet compelling and extraordinary conditions, EPA has repeatedly found that California's air quality problems satisfy the need criterion of

section 209(b) (see, e.g., 49 FR 18887 and 18890 (May 3, 1984), 58 FR 4144 (January 13, 1993)). Moreover, the magnitude of the reductions in emissions needed to reach attainment in the FIP areas, including mobile source emissions (discussed above at III.B), provides ample evidence of the need for more stringent motor vehicle emission standards in California.

Finally, with respect to the criterion of consistency with section 202(a), EPA believes that the medium-duty vehicle program promulgated in this final action is consistent with both the technological feasibility and certification elements of that criterion. For the reasons explained in this section, EPA believes that the standards promulgated today are technologically feasible within the leadtime provided, taking into account the cost of compliance. Moreover, no aspect of the program establishes any new certification test procedures that are inconsistent with either existing federal or California test procedure requirements. Consequently, EPA believes that the medium-duty vehicle program in the FIP satisfies this prong of section 209 as well.

e. FIP final rule requirements.

(1) Standards. EPA has decided to not promulgate the proposed composite NMHC standards for the reasons discussed in the light-duty section. The reader is directed to the light-duty vehicle discussion contained in section III.D.i. for a complete discussion of EPA's reasons. In place of the proposed standards, the FIP will adopt CARB's current LEV and ULEV NOx and NMOG

standards using the phase-in schedule discussed below. EPA believes that the combination of the MDV standards and phase-in schedule contained in today's final rule will provide roughly the same level of control as required from light-duty vehicles under CARB's low-emission vehicle program.

EPA expects that vehicle manufacturers will be able to comply with the ULEV NOx and NMOG standards for MDVs by applying the same technology advancements employed to meet the light-duty LEV standards (e.g., improved catalyst formulations, and electrically heated catalysts). . . EPA believes that some redesign of the emission controls may be necessary to address the differences between MDVs and LDVs/LDTs such as lower cold-start exhaust temperatures, higher warmed-up exhaust temperatures, and increased exhaust flow rates. However, these differences will be a matter of degree and not involve different types of technologies.

For MDVs certifying under the optional engine-based standards, EPA is retaining CARB's current engine-based composite NOx plus NMHC standards for MDVs (i.e., 3.5 g/bhp-hr NOx plus NMHC for LEVs and 2.5 g/bhp-hr NOx plus NMHC for ULEVs). As described in the heavy-duty vehicle section of today's action (section III.D.3.), EPA is finalizing a 2.0 g/bhp-hr NOx standard and a 0.4 g/bhp-hr NMHC standard for HDEs beginning in 2002. Therefore, the eventual requirement that 100 percent of these engines meet CARB's current engine-based ULEV composite NOx plus NMHC standard for MDVs (2.5 g/bhp-hr NOx plus NMHC) in 2002 and

beyond described below should require essentially the same level of control required from the FIP program for HDEs.

EPA is providing exemptions or exclusions from the standards and other requirements described in this section for in accordance with the national exclusion and exemption provisions contained in 40 CFR part 85 subpart R.

(2) Phase-in schedule. EPA is revising the phase-in schedule contained in the proposal to allow for additional leadtime to comply with the tight ULEV NOx and NMOG standards for MDVs. Upon reexamination of the schedule contained in the FIP proposal, EPA believes that the proposed phase-in schedule (which would require 100 percent compliance with the ULEV NOx and NMOG standards in 2000) would be more stringent than that for the LDV and LDT standards and therefore would be difficult to meet. For comparison purposes, CARB's fleet average requirements for LDVs under the low-emission vehicle program do not assume full compliance with LEV standards until 2000. Moreover, because of banking provisions, full compliance with the LDV LEV standards will likely not happen until slightly after 2000. Therefore, in order to fully develop and transfer the improved emissions control technology developed on LDVs and LDTs to MDVs, manufacturers will need additional leadtime. In order to provide manufacturers with sufficient leadtime to transfer technology to MDVs, EPA is finalizing the phase-in schedule contained in the California SIP for the 1998 and later model years (see Table III.D.2.a-3). The revised phase-in schedule applies the same LEV.

and ULEV technology adoption assumptions used by CARB in establishing the low emission vehicle program for LDVs and LDTs with an additional delay of two years. EPA agrees with CARB that the two year lag will provide sufficient time for manufacturers to fully develop and transfer emissions control technology to MDVs.

In response to the comment on small volume manufacturer requirements, EPA is adopting the same phase-in approach used by CARB for small volume manufacturers. Under today's action, small volume manufacturers (as defined by CARB's current regulations) will be exempted from complying with the phase-in schedule noted above until 2002. Beginning in 2002, all MDVs sold by a small volume manufacturer must comply with the ULEV NOx and NMOG standards. Therefore, beginning in 2002, all MDV manufacturers will have to comply with the same set of standards. EPA has discussed this provision with CARB and understands that they will be finalizing the same provision when they replace the FIP MDV program with their own regulations.

(3) Enhanced In-Use Recall and I/M-based Recall. As with light-duty vehicles, EPA proposed to apply the same enhanced in-use recall program and I/M-based recall program to MDVs. EPA is dropping both the enhanced in-use recall provisions and the I/M-based recall provisions from the final rule. The reader is directed to the light-duty vehicle section of today's final rule (section III.D.1.) for a complete discussion of EPA's rationale.

(4) Fleets. The FIP proposal contained provisions that

affected fleets which operate MDVs. As discussed in section III.D.1. of today's action, EPA is finalizing provisions that affect fleet operators in the three FIP areas. These provisions require that a certain percentage of a fleet's new vehicle purchases (including MDVs) be inherently low-emission vehicles. The reader is referred to the section describing the fleet requirements for light-duty vehicles under the FIP (section III.D.1.) for a complete discussion of the fleet requirements that apply to MDVs.

(5) Importation of MDVs into California. As with light-duty vehicles, EPA proposed to restrict the new registration of some 49-state vehicles in California. EPA received no comments specifically on these provisions as they apply to medium-duty vehicles. EPA is retaining the restrictions for light-duty and medium-duty vehicles with some modification in response to comments. The reader is directed to the discussion of light-duty vehicle importation restrictions (section III.D.1.h) for details.

3. Programs for On-Highway Heavy-duty Vehicles and Engines.

a. Introduction. CARB estimates that heavy-duty trucks and buses will be the largest contributors to NOx pollution in the South Coast if there is no further control. While EPA and ARB have reduced the NOx emissions from heavy-duty trucks by approximately 50 percent, the reductions already achieved by light-duty vehicles have been much greater.

EPA proposed a comprehensive approach for reducing emissions

from on-road heavy-duty engines. The approach included new standards and several provisions to enhance the in-use effectiveness of those standards and help ensure long term emissions benefits. EPA is promulgating with modifications, new standards for non-methane hydrocarbons (NMHC) and oxides of nitrogen (NOx) emissions, a program to ensure emissions control for the full life cycle of engines, an I/M program for certain gasoline-fueled vehicles, and a fleets program. EPA is not promulgating provisions for an enhanced recall program, multiple state high emitting engines, or a fleet averaging program.

This section contains a brief description of the proposal, the details of EPA final decisions in each of the program areas listed above, and a summary and analysis of pertinent comments (a full summary and analysis of comments is contained in the Technical Support Document for this final rule).

The final rule requirements contained in this section, in general, apply to 2002 and later model year heavy-duty engines used in vehicles with a gross vehicle weight rating above 14,000 pounds. As described in III.D.5.d., military vehicles may be exempted or excluded from the requirements of this section.

As explained above in section III.A., in promulgating a FIP under section 110(c) EPA may take any actions that the State could take. As section 209 of the CAA provides, California is not preempted from adopting and implementing a motor vehicle emissions control program provided its program satisfies the criteria of section 209(b). EPA believes that it, standing in

California's shoes in the context of the FIP, may adopt a motor vehicle program or supplement California's own motor vehicle program provided that EPA's actions would satisfy the criteria of section 209 (b) for a waiver of federal preemption if California were itself taking them. Those criteria are discussed above in the context of the medium-duty vehicle program.

EPA believes that the on-road heavy-duty vehicle and engine program promulgated in this final action satisfies the section 209 waiver criteria. Thus, California could undertake the heavy-duty vehicle and engine program described below, and, therefore, EPA has authority under section 110 (c) to promulgate the program.

With respect to the protectiveness of the standards, all of the promulgated standards are at least as protective as the otherwise applicable federal standards (e.g., the generally applicable NOx and HC standards in the case of the vehicles and engines covered by the heavy-duty program). Indeed, the standards are at least as stringent as the comparable standards that California has already adopted and for which waivers have already been granted.

With respect to the need to meet compelling and extraordinary conditions, EPA has repeatedly found that California's air quality problems satisfy the need for criterion of section 209 (b) (see, e.g., 49 FR 18887 and 18890 (May 3, 1984), 58 FR 4144 (January 13, 1993)). Moreover, the magnitude of the reductions in emissions needed to reach attainment in the

FIP areas, including mobile source emissions (discussed above at III.B.), provides ample evidence of the need for more stringent motor vehicle emission standards in California.

Finally, with respect to the criterion of consistency with section 202(a), EPA believes that the heavy-duty vehicle and engine program promulgated in this final action promulgated in this final action is consistent with both the technological feasibility and certification elements of that criterion. For the reasons explained below, EPA believes that the various elements of the program are technologically feasible within the leadtime provided, taking into account the cost of compliance. Moreover, no aspect of the program establishes any new certification test procedures that are inconsistent with either existing federal or California test procedure requirements. Consequently, EPA believes that the heavy-duty vehicle and engine program in the FIP satisfies this prong of section 209 as well.

EPA also notes that the engine recertification requirements for heavy-duty vehicles and engines and the inspection/maintenance program for certain gasoline-fueled heavy-duty vehicles need not satisfy the section 209(b) criteria since those requirements, being in-use regulation of vehicles directed at vehicle owners, and not the original manufacturers, are not preempted by section 209(a). Thus, EPA has the authority under section 110(c) to promulgate those requirements without needing to analyze whether such programs satisfy the criteria for a waiver from preemption under section 209 of the CAA.

b. Emission Standards.

(1) Oxides of Nitrogen. In the proposed FIP, EPA posed a new standard of 1.5 g/bhp-hr for NOx emissions from heavy-duty engines, beginning in 1999. The proposal included a provision to allow sales of engines emitting up to 2.5 g/bhp-hr; but vehicles with these engines were to be subject to an initial surcharge based on a calculation of \$10,000 per ton of increased lifetime NOx emissions.

Manufacturers commented that gasoline- and diesel-fueled engines simply could not meet the proposed NOx standard by 1999, if ever. Some alternative-fuel engines could perhaps be built by 1999, but manufacturers claimed that they could not design such engines for the whole range of heavy-duty vehicle applications. Commenters also expressed a concern for fuel availability if the truck fleet was at some point dependent on alternative fuels. Fire departments requested an exemption from the NOx standard because of the expectation that converting to alternative fuels would jeopardize their emergency operations.

In the November 1994 SIP, CARB committed to requiring a 2.0 g/bhp-hr standard by 2002. CARB emphasized the need for EPA to set similar federal emission standards for federal heavy-duty vehicles to prevent high emissions in California from out-of-state vehicles. CARB also suggested several other possible measures to reduce emissions, such as retrofitting old engines or introducing various market incentives to modify operations, increase turnover to newer trucks, etc.

Commenters have made clear the importance of setting emission standards that are feasible for diesel-fueled engines. EPA recognizes that a near-term, wholesale conversion from diesel to alternative fuels for the heavy-duty fleet would severely disrupt the State economy. EPA is therefore interested in pursuing cost-effective emission standards that can be met with diesel fuel, while encouraging the continued development and growth of the alternative fuel segment of the heavy-duty vehicle market.

EPA believes a standard of 2.0 g/bhp-hr is the most stringent level feasible for diesel, gasoline, and alternative-fueled engines in the 2002 model year. For diesel engines, several technologies currently under development may contribute to reducing NOx emissions. For example, fuel injection is being optimized for lower emissions by electronically controlling the rate and shape of injection. With improved hardware and electronics, it is now possible to control the timing of injection to be spread precisely over two or three discrete phases. Manipulating the injection rate and timing can reduce the incidence of premixed combustion, which causes cylinder temperatures to increase sharply and leads to NOx formation. The preferred approach is to inject the bulk of the necessary fuel into an established flame so that the injected fuel burns steadily as it evaporates. Charge air compression and aftercooling can also be optimized for reducing NOx emissions.

Intake air dilution, either by exhaust gas recirculation or

water injection, has great potential for reducing NOx emissions. In either form of intake air dilution, the presence of inert gases suppresses cylinder temperatures, and thus NOx formation, by absorbing some of the heat of combustion. One primary obstacle to using exhaust gas recirculation is the presence of particulate matter in the exhaust stream. The particulate causes wear on turbocharger and engine surfaces and causes deposits that limit the heat-exchanger effectiveness of the aftercooler. Water injection also poses design problems. Added water could cause corrosion of engine components and lead to deposits in the water injection system and in the engine. Also, vehicle operators would have to periodically refill the water reservoir, without any tangible benefit.

NOx reducing catalysts have potential for emission reductions, though further development is needed before they are commercially viable. Some NOx catalysts depend on addition of a reducing agent, either diesel fuel or some other chemical, to break NOx molecules down to elemental nitrogen and oxygen. Other catalysts have been reported to achieve measurable reductions in NOx emissions by passing the lean (i.e., oxygen-rich) mixture of exhaust gases over a noble metal.

A variety of design changes to lower particulate matter could provide more flexibility to lower NOx emissions. Because many technologies used to control NOx tend to increase PM (and vice versa), any measure that reduces the baseline PM emission level makes it possible to use a wider variety of technologies to

lower NOx. Design parameters for fuel injection and fuel-air mixing can be optimized to reduce PM. Higher fuel injection pressures, optimized spray pattern, reduced sac volume, improved swirl and piston head profile, and reduced crevice volume are all being investigated. Turbochargers and aftercooling might also be redesigned for potential gains in emission control.

Several aftertreatment devices under development focus on oxidizing PM emissions. Oxidation catalysts are already widely used in heavy-duty diesel vehicles to meet the new 1994 emission standards. Catalytic traps would greatly reduce particulate emissions with continuous regeneration, avoiding the periodic buildup of particulate that prevented commercialization of previous trap designs. Finally, researchers are pursuing electrochemical and plasma approaches to remove particulate from the exhaust stream.

EPA is also interested in the possibility of modifying the formulation of diesel fuel to achieve lower emissions. If such modifications seem to be a cost-effective means of reducing emissions, EPA will explore a requirement for a cleaner diesel fuel.

Gasoline-fueled engines are already closer to the level of the new standard, though application of additional emission control technologies may be necessary. Eight of ten engine families certified for 1994 are equipped with oxidation catalysts; upgrading to three-way catalysts should provide a substantial NOx reduction with little additional complexity.

Three-way catalyst technology from light-duty applications should be adaptable for heavy-duty applications. Ignition systems, air management, and exhaust gas recirculation might also be optimized to meet lower emission standards.

Starting with the 2002 model year, EPA is promulgating a NOx standard of 2.0 g/bhp-hr for all on-highway heavy-duty engines sold in California. As proposed, EPA will allow use of the averaging, trading and banking programs for compliance with this standard. Because this standard is expected to be feasible for all on-highway applications, EPA is not promulgating a provision to allow the sale of engines exceeding the emission standards with payment of a surcharge. EPA will apply the standard as California would apply it, providing whatever exemptions for emergency vehicles that CARB would apply.

In addition, as discussed in III.B.1., EPA intends to pursue a revision to the national NOx standard for on-highway heavy-duty vehicles. Tighter federal standards would assist California in reaching air quality attainment, since one fourth of the heavy-duty VMT is attributed by CARB to out-of-state vehicles. Tighter federal standards would also help the Northeast States in their efforts to come into compliance with ozone air quality standards; heavy-duty trucks will soon be the largest contributor to NOx emissions in the region according to the Northeast States for Coordinated Air Use Management. Establishing tighter federal standards would also provide manufacturers with one fixed target for emission control for the broader market. Manufacturers could

thus develop fewer engine models and apply all of their research and development costs to the larger number of engines, lowering per-unit costs. Section 202(b)(1)(C) of the Clean Air Act precludes revisions to the federal NOx standard before the 2004 model year. EPA therefore intends to develop a proposal for a NOx standard for the rest of the nation's on-highway heavy-duty engines consistent with the California engines but beginning not earlier than the 2004 model year. As part of the national effort, EPA is open to the possibility of cooperating with industry in the development of emission control technologies.

(2) Exhaust Hydrocarbons. EPA proposed tightening the exhaust hydrocarbon standard to 0.2 or 0.6 g/bhp-hr NMHC, beginning with the 1999 model year for all heavy-duty vehicles sold in California. Heavy-duty engine manufacturers commented that a 0.6 g/bhp-hr standard would reflect the current levels of most gasoline- and diesel-fueled engines, though some natural gas-fueled engines would have difficulty meeting the 0.6 g/bhp-hr level.

Data from EPA certification shows, as manufacturers commented, that most certified engines have HC emissions well below the current standards. EPA believes that manufacturers can reduce NMHC emissions on some engines and that a lower standard will prevent future technologies from causing a general increase in HC emission levels as manufacturers focus on controlling NOx emissions.

For diesel-fueled engines, 84 percent of 1994 model year

engine families emit less than 0.4 g/bhp-hr nonmethane hydrocarbon (NMHC) or less. Oxidation catalysts and fuel injectors with reduced sac volume are two technologies that will contribute to lower HC emissions for those engines that need further improvement.

For gasoline-fueled engines, about 60 percent of 1994 engine families emit 0.4 g/bhp-hr NMHC or less. Further improvement could be gained from adjusting injection timing and optimizing catalyst design for oxidation of HC emissions. For example, adding a three-way catalyst with feedback control for the air-fuel ratio would reduce HC emissions

One of the five natural gas engines certified for 1994 in California already meets the 0.4 g/bhp-hr NMHC emission level. Of the remaining four engines, the highest certified emission level is 0.9 g/bhp-hr, yet three of these engines are not equipped with catalysts. Catalysts specially formulated for CNG engines can reduce NMHC emissions by well over 50 percent. EPA therefore expects these engines to be capable of meeting the emission standards for the 2002 model year either through improved fuel management and better control of the combustion process, or at least through the use of catalysts.

While these data may imply that a standard lower than 0.4 g/bhp-hr could be feasible by 2002, EPA believes that the research and development efforts for heavy-duty engines are best spent on NOx reduction technologies. A tighter HC standard may be appropriate to achieve further reductions in HC emissions or

to prevent the possibility of increased HC emissions from engines with improved NOx control, but the CARB SIP submittal was silent on the issue of whether the standard should force new technology.

In the interests of facilitating SIP program replacement, EPA is adopting a new standard for all 2002 and later model year heavy-duty engines of 0.4 g/bhp-hr nonmethane hydrocarbons (NMHC). The 0.4 g/bhp-hr standard is the lowest standard achievable with the use of existing technology. As with NOx emissions, EPA expects to pursue a revision to national HC standards for on-highway heavy-duty vehicles. In that process, EPA will reconsider the appropriate level of the HC standard. Since so many heavy-duty vehicles are already meeting the 0.4 g/bhp-hr level, EPA may determine that an even more stringent HC standard is a cost-effective way of reducing nationwide HC emissions.

(3) Evaporative Hydrocarbons. In the proposed FIP, EPA proposed a requirement for all heavy-duty vehicles in California to be "evap-free," i.e., to have minimal evaporative emissions without using an active control system. EPA was concerned that the proposed 1.5 g/bhp-hr NOx standard would be more easily met by gasoline engines than by diesel engines. Any resulting shift in the heavy-duty fleet from diesel to gasoline would increase hydrocarbon emissions because of the evaporative emissions from gasoline. The increase in HC emissions is pronounced if gasoline-fueled vehicles have defective evaporative control systems, which commonly occurs. As an alternative, EPA requested

comment on subjecting gasoline-fueled heavy-duty vehicles to enhanced I/M for assurance of in-use emission control.

Manufacturers commented that the evap-free requirement was unfair in that it effectively precluded the use of gasoline-fueled heavy-duty vehicles.

EPA believes that the 2.0 g/bhp-hr NOx standard in 2002 will provide no compelling advantage for using gasoline over diesel, which removes the anticipated driving force for a fleetwide trend toward greater use of gasoline for heavy-duty engines. EPA no longer believes that the evap-free provision is necessary; however, in the absence of an evap-free requirement, evaporative emissions from gasoline-fueled vehicles are still an issue. Evaporative emission control requirements are already in place for these vehicles, so the issue is limited to ensuring that those controls are in place and operating.

EPA desires to maintain equal treatment for all heavy-duty vehicles, independent of fuel type, while only placing requirements where they will achieve benefits. While diesel vehicles have inherently low evaporative emissions, gasoline-fueled heavy-duty vehicles can have very high evaporative emissions if the pressure or purge systems in their evaporative emissions controls cease to operate properly. Therefore, EPA is applying purge and pressure tests of the evaporative control systems in I/M testing for vehicles which are not certified as evap-free. These requirements will lower evaporative emissions by about 3 g/mi from the significant number of heavy-duty

vehicles with nonfunctioning evaporative control systems. If manufacturers opt to certify vehicles (including diesel) as evap-free, these vehicles are exempt from I/M testing based on their inherently low levels of evaporative emissions.

(4) Test Procedures. Certification and enforcement testing of on-highway heavy-duty engines and vehicles subject to the new NOx and hydrocarbon standards--including those engines used in medium-duty vehicles that are certified to engine-based standards--will utilize current EPA test and sampling procedures, with two exceptions. First, test fuels meeting California's current diesel fuel specifications may be used. Second, exhaust hydrocarbon measurements will be quantified as nonmethane hydrocarbons, or other fuel-specific equivalent (such as organic matter hydrocarbon equivalent, in the case of methanol fuel). Assembly-line testing will be performed under EPA's Selective Enforcement Audit testing program as described in 40 CFR part 86, subpart K.

Manufacturers choosing to comply with the evap-free provisions must submit test results or an engineering evaluation to demonstrate that the certified vehicles have inherently low evaporative emissions. Such test procedures are described in the EPA Clean Fuel Fleet program regulations, contained in 40 CFR 88.311-93.

For gasoline- and methanol-fueled vehicles, EPA will also require certification testing for evaporative emission testing using the federal test procedure and standards. CARB is expected

to request a waiver of federal preemption for its own evaporative emission test. As part of that procedure, EPA will work with CARB to ensure that the minimum amount of testing is required. The emission standards apply equally to certification and recall testing.

Other applicable California standards and procedures, e.g., carbon monoxide and smoke standards, are unaffected by the FIP. Other aspects of applicable federal or California regulations, including certification, assembly line testing, and recall, will also continue to apply.

c. Engine Recertification Program (Rebuild Program). Engine manufacturers certify that their engines will maintain emissions control only for a certain minimum period of time, the useful life. However, truck operators often use these engines for periods three or more times the statutory useful life. Thus for much of the actual operating life of an engine, there may be no assurance that the engine emission controls are operating. EPA was concerned that the new technologies used to meet the very stringent proposed NOx standard would fail in use sometime after the end of the useful life and not be repaired or replaced. EPA was also concerned that engines would be rebuilt to higher emitting engine configurations. Therefore, EPA proposed to require that engines certified to the proposed new engine emissions standards be recertified to those standards when their useful life expired and remain recertified thereafter.

EPA received significant comment on this proposal. Many

people involved in the engine manufacturing and rebuilding businesses commented that engines do not deteriorate even after the useful life is over. Commenters also claimed that our requirements were too complex and inflexible to be appropriate for actual rebuild practices. Finally commenters claimed that the proposed certification procedure was too lengthy and expensive. Interested readers should review the summary and analysis of comments provided in the Technical Support Document for more information regarding comments on these matters.

EPA continues to believe that the recertification program is essential for ensuring long-term continuous emissions control. As described in section III.D.3.b. above, the new NOx standard will require new emissions control technologies to be used. Because many of the controls are not likely to be needed for engine performance but only for emissions control, there will be little incentive to repair or replace critical emissions controls in the absence of the recertification program.

EPA is adopting the engine recertification program. The program name was changed to the engine recertification program (as opposed to the engine rebuild program) because many engines will likely be recertified without needing to be first rebuilt. EPA has added some flexibility to the program in response to comments. The reader is referred to the summary and analysis of comments in the Technical Support Document for a complete discussion of program details and supporting rationale.

EPA plans to propose an engine recertification program in

its national rulemaking to control heavy-duty engine NOx emissions. During rulemaking development, EPA will further consider the issues raised in the FIP. EPA will also consider other approaches for ensuring lifetime engine emissions control and will work with interested parties in developing and evaluating any such options. EPA expects that a recertification program in the national rule would supersede the FIP recertification program.

d. I/M Program. In the proposed FIP, EPA proposed a limited I/M program for heavy-duty vehicles. Specifically, EPA proposed to subject to enhanced I/M all pre-1999 gasoline-fueled heavy-duty vehicles less than 19,500 pounds GVWR. EPA requested comment on including gasoline-fueled heavy-duty vehicles in an I/M program as an alternative to the evap-free requirement, as described above.

EPA received no specific comments on I/M testing for pre-1999 vehicles. Such vehicles are currently covered by California I/M programs utilizing idle test procedures.

EPA is promulgating the requirement for full enhanced I/M testing for all gasoline-fueled heavy-duty vehicles up to 19,500 pounds GVWR, as proposed. This program will be established starting in July 1997. As described above, starting with the 2002 model year, gasoline-fueled heavy-duty vehicles of all sizes will be required to pass the evaporative portion of enhanced I/M testing. Because all heavy-duty vehicles will be subject to the recertification program, enhanced I/M exhaust emission testing is

not considered necessary for these vehicles. A heavy-duty vehicle of any size or model year certified to meet evap-free provisions will be exempted from the I/M requirements for evaporative testing.

e. Recall Program. EPA proposed an enhanced recall program for light-duty vehicles and heavy-duty engines. For reasons described in the light-duty vehicle Section, III.D.1., EPA is not adopting the enhanced recall requirements for light-duty vehicles or heavy-duty engines. Engine will instead be subject to EPA's existing recall program described in 40 CFR Part 85 subpart S.

f. Multiple State High Emitting Engines. EPA was concerned that trucks registered in another State but operating at least part of the time in California would not be subject to the very tight California NOx standard. EPA was also concerned that the cost impact of the proposed California NOx standard would cause interstate trucks that would normally be purchased and registered in California to be purchased and registered in another State. Although registered in another State, these trucks would probably still have significant operation in California. Such practices would cause a substantial loss of emissions benefits in the three FIP areas. To address these concerns, EPA proposed that interstate trucks operating in California either be part of the fleet averaging program or be subject to usage restrictions.

EPA no longer believes that a shift in purchasing and registration practices is likely or that average emissions levels of interstate and within-state trucks will differ significantly.

As described in Section III.D.3.b. above, EPA is adopting a 2.0 g/bhp-hr standard beginning in 2002 and intends to propose a standard nationally to take effect in 2004. The 2.0 g/bhp-hr standard is not likely to create a great economic incentive to shift vehicle purchasing and registration practices to another State. Even if there is an advantage in 2002 and 2003, the advantage would be very short term, disappearing as the California and national standards are harmonized. With the incentive to change purchase and registration practices greatly diminished, EPA no longer believes interstate provisions are necessary.

g. Fleet Averaging Program. The benefits achieved in the near term from a new NOx standard depends on the turnover of old vehicles to new vehicles meeting the more stringent new standard. Eventually vehicles wear out and must be replaced. EPA was concerned that turnover of the fleet would begin to lag historical turnover rates due to the increased cost of vehicles and the possible need for alternative fuels. A dramatic decrease in vehicle turnover rates could substantially reduce the benefit of the new standard at least in the time frame of the attainment deadline years.

Because the contribution of HDEs to attainment was projected assuming normal vehicle turnover would occur, EPA believed that it was important to have a program that maintained continued fleet turnover. To encourage fleet turnover, EPA proposed the fleet averaging program. The program required vehicle fleets to

meet an average NOx emissions level each year or pay a surcharge based on the tons per year of NOx that were being emitted due to not meeting the target.

EPA no longer believes that a significant long-term lag in vehicle turnover is likely, especially considering that diesel-fueled engines meeting the 2.0 g/bhp-hr NOx standard are expected to be available. EPA therefore is not promulgating the fleet averaging program for on-highway heavy-duty vehicles. EPA plans to monitor vehicle turnover in the beginning years of the program to ensure that a program to encourage fleet turnover is indeed unnecessary. EPA will reconsider the need for a program if fleet turnover lags its historic rates to the point where attainment is threatened.

h. General Enforcement. EPA proposed that it would be a violation of Federal law for any engine manufacturers or owners to fail to comply with the specific requirements and prohibitions described above. In addition, under the Engine Recertification Program, EPA proposed that it would be a violation of Federal law for the California Department of Motor Vehicles (DMV) or any other department of the State of California (or any political subdivision thereof) to register any vehicle subject to the requirement for which a valid certificate of compliance has not been presented. Any person providing a fraudulent certification or otherwise aiding or abetting in the violation of this section, would also be violating Federal law. Violation could result in civil penalties under Federal law of up to \$25,000 per violation.

Each instance of unlawful registration would be considered a separate offense.

EPA received no comments on these measures. EPA is therefore promulgating the general enforcement measures unchanged (except for the model year in which they take effect).

i. Importation of Heavy Duty Vehicles into California. For the purposes of this discussion, importation refers to the act of moving federally certified (or "49-state") vehicles into California for registration purposes. The proposed Fleet Averaging Program effectively limited importation, since federally certified trucks would likely raise the average emission level of trucks in California. Without the fleet averaging program, nothing would prevent people from purchasing trucks outside the State and registering them in the State. If EPA adopts stringent new national standards in 2004, during model years 2002 and 2003 there may be an incentive to import Federal vehicles rather than purchase California vehicles. This action would circumvent the intent of the program, and disadvantage HDV dealers and other people who were acting honorably in California. Increased use of 49-state trucks in California would nullify some of the progress the California standard entails, and have a resulting negative impact on air quality. California currently has no regulations governing the importation of HDVs into the State.

CARB has agreed to provide incentives to purchase clean HDVs, but EPA cannot give such incentives. Therefore, EPA is

finalizing provisions similar to the light-duty prohibition on registering 49-state vehicles for HDVs for calendar years 2002 and 2003 (see Section III.D.1.h. for a discussion of the light-duty program). The State of California shall not allow established residents (including corporations, companies, partnerships, etc.), or new residents to register any 2002 or 2003 model year HDV unless the engine complies with the HDV engine emissions standards specified in this final rule.

Government HDVs brought into the FIP areas on a temporary or emergency basis, and HDVs which have been excluded from, or granted a national security exemption from Federal emission standards will be excluded from these requirements. State and local emergency vehicles will also be excluded from this section.

In order to mitigate the burden of this section on individuals, EPA also excludes from this prohibition individual owners who have recently moved to California (defined as residents of California for less than three months). A person meeting this criterion may register a federally certified HDV, with at least 7,500 miles, which was previously registered in another State for at least one year while the owner was a resident of that State.

4. Program for Nonroad Engines and Vehicles.

a. Introduction. There are significant existing and developing control programs for engines used in nonroad mobile equipment such as lawnmowers, boats, and backhoes. The proposed

FIP took account of the many rulemakings that were ongoing in this category and supplemented them where it appeared necessary.

California has its own program to control emissions from some nonroad sources, but under Section 209(e) of the Act, California is pre-empted from regulating new engines used in farm and construction equipment under 175 hp. They have developed regulations for several categories of heavy-duty diesel cycle engines including farm and construction equipment 175 hp and larger, utility engines and recreational vehicles. In the November SIP, CARB commits to develop several more rules. Where California has submitted a waiver application for an adopted regulation, EPA has credited the emissions reductions it achieves. These waiver issues are discussed under Section II.B.2.a of this notice.

The Clean Air Act directed EPA to study nonroad sources, and to propose rules for any that cause or contribute to air pollution in more than one city. At the time of the publication of the proposed FIP, most of the forthcoming national rules had not yet been proposed. Since the FIP proposal, EPA has proposed national rules for marine engines and utility, lawn and garden engines and finalized its rule for larger diesel engines.

EPA has issued a guidance memorandum "Future Nonroad Emission Reduction Credits for Court-Ordered Nonroad Standards" which outlines the guidance for the calculation of emission reductions for use in the preparation of State Implementation Plan (SIP) submittals. Under that guidance, States may use the

emissions reductions from rules which have not yet been promulgated in developing their SIPs. The CARB used this guidance in developing its SIP. EPA today uses this policy to credit national rules which are required by the Act or by Court Order in the FIP.

The following sections outline the specific regulatory provisions for nonroad categories.

b. On-Highway Motorcycles and Nonroad Engines Used in Recreational Vehicles and Nonroad Motorcycles. EPA proposed in the FIP to promulgate emissions standards for motorcycles and nonroad recreational vehicles similar to but more stringent than EPA's existing on-highway motorcycle program found in 40 CFR Part 86, Subpart E. At the time, the CARB was finalizing its own controls for these engines which were slightly less stringent than the proposed FIP standards.

Most public comment indicated that EPA should instead rely on CARB regulatory programs for the control of HC, NO_x, and CO from on-highway motorcycles, nonroad motorcycles, and other recreational vehicles such as all-terrain vehicles. Further, public comment indicated that evaporative emissions (from displaced vapors during refueling and from daily heating of the fuel tank) and emissions from operations not included in the current test procedures from these sources may be an important area for further analysis and emission control. On a Federal basis, EPA hopes to jointly evaluate evaporative emissions as well as off-cycle emissions with CARB and the manufacturers of

motorcycles and recreational vehicles. However, support was also received for the proposal.

Commenters involved in trials competition stated that the motorcycles used in such competitions should be exempt from any regulation. Many users of motorcycles do not think they contribute much to pollution. Also, many commenters feel that even if motorcycle engines do contribute to pollution, it is more important to allow this industry to flourish, thereby providing jobs and economic vitality.

CARB has since finalized its regulations for these sources (CCR, Title 13, sections 1958, 1976, 2412) and submitted them for a waiver. The CARB program was developed by CARB specifically for the problem of exhaust emissions from this source in California. It achieves significant reductions in ozone forming emissions. EPA is crediting these emissions reductions in advance of finalizing the waiver because EPA knows of no current reason why the waiver will not be granted (See Section II.B.2). EPA does not believe that the proposed additional reductions in exhaust emissions are appropriate at this time and is not finalizing any additional control for on-highway motorcycles and nonroad engines used in recreational vehicles and nonroad motorcycles. However, EPA is committed to undertaking study of evaporative emissions from these sources and promulgating national nonroad exhaust emission standards.

c. Marine Pleasurecraft. EPA proposed to rely on national standards for marine pleasure craft which are required to be

completed in November of 1995. These regulations were proposed November 9, 1994 (59 FR 55930) and apply to gasoline and diesel marine engines used in personal watercraft (such as Jet Skis), outboards, in-boards and stern drive vessels. The 75 percent HC emissions reduction that these regulations were proposed to achieve is included in the FIP and SIP inventories. In addition, EPA proposed a system of fees to encourage use of only lower emitting engines in the FIP area.

Public comment in response to reliance on the national standard in the FIP was generally positive but reaction to the fee system was overwhelmingly negative. One commenter noted that the fee system would decrease the ability of consumers to save money which they might otherwise use to purchase new engines and retire old engines, thereby prolonging the turnover of the fleet and reducing the potential effectiveness of Federal emission standards. Many boaters commented that it would be unfair for boaters to be penalized for operating dirty engines when only dirty engines were available for purchase when they bought their boats. Boaters feel it is the engine manufacturers' responsibility to provide the market with clean engines. Many boaters support a "cash for clunkers" type scrappage program, under which the owner can receive money for scrapping a dirty engine, because it helps boaters to afford a new, clean engine.

EPA is responding to public comment by declining to finalize the fee provision: No fees for permits will be required for the operation of pleasurecraft in the FIP areas. Additionally, EPA

will be investigating the development of scrappage programs and supports their implementation on a local level.

d. Utility Engines at or under 19 kW. Spark-ignition engines at or under 19 kw (approximately 25 hp) are used in lawnmowers, snow blowers, weed wackers and other utility equipment. California and EPA have regulatory programs for different subgroups of these engines. Where they overlap, the existing proposals and rules are consistent. These programs were the basis for the FIP proposal for these engines.

California has approved for adoption emission standards for utility and lawn and garden equipment and has submitted its regulations to EPA for a waiver of section 209 preemption. EPA has held public hearings on this waiver request and will shortly be making a determination.

Additionally, EPA is under court order to develop rules controlling these engines by May 1995 and proposed such rules in May 1994 (59 FR 25399, May 16, 1994). EPA is also in a regulatory negotiation to develop rules which will allow an even more significant reduction in emissions from this equipment. EPA proposed to take credit in the FIP for the emission reductions which are estimated to be achieved as a result of this two-phase Federal regulatory approach. Public comment indicates support for EPA taking emission credit in the FIP for the emission reductions which will occur due to Federal regulations, both Phase I and Phase II. EPA estimates that the combined emission reductions from Phase I and Phase II will be 90% from 1990 levels

for hydrocarbons. If the combined reduction does not achieve 90%, EPA will propose special measures for the State of California at a later date.

EPA is taking credit in the FIP for the emission reductions which will occur as a result of the California program and the two-phase Federal regulatory program. There is no FIP standard for these engines in the rule finalized today.

e. Nonroad Compression-ignition Engines under 37 kW and Nonroad Spark-ignition Engines over 19 kW and less than 37 kW. These engines are used in forklifts, large outdoor lights, air conditioners and for other purposes. EPA did not propose emission reductions in the FIP from these engines because our data showed that very few were sold. The Agency is under court order to decide whether to propose and implement national emissions standards from SI nonroad engines greater than 19 kW and CI nonroad engines under 37 kW by November 1996 and plans to make the decision at that time.

Public comment indicated support for the development of Federal regulations to reduce pollution from these sources and some concern that there were no standards in the FIP. One reason for that concern was a mistake in the inventory for the South Coast which made these engines appear to be more important than they are. That mistake has been fixed and EPA is finalizing this FIP with our emission reductions from this source.

f. Compression-ignition Engines at or above 37 kW. Compression-ignition (diesel) engines over 37 kw are used in farm

and construction equipment among other things. CARB's inventories show that these engines will be the largest nonroad source of NOx emissions in 2010 if there are no further controls.. California is preempted from regulating new engines which are under 175 hp and are used in farm and construction. While the preempted engines are a large percentage of the category, California has regulations for the remaining engines in this class.

EPA proposed to take credit for the emission reductions which are estimated from CARB's rules and the then proposed Federal regulations that apply to these engines (58 FR 28809, May 17, 1993). The Federal regulations expand the existing first tier California regulations to the preempted categories. EPA also proposed in the FIP to require significant further reductions from new engines meeting these standards. This discussion only addresses the national standards proposals, the FIP standards proposal is discussed in Section III.d.4.g. below.

Since the proposal, the final rule for national control of these engines was finalized (59 FR 31306, June 17, 1994) and a 37 percent reduction is predicted when the new engines are fully phased in. The majority of public comment supported taking credit for existing rules in this category. Additionally, public comment indicated that additional reductions from this source are needed. The existing programs are included in the FIP inventories; additional control for these engines is described directly below.

g. New Standards for Nonroad Engines Over 37 kw.

(1) Introduction. EPA proposed a control program for nonroad engines rated at or above 37 kw (50 hp) operating in the FIP areas. The proposal included new exhaust emission standards for NOx and NMHC, an inherently low evaporative emissions requirement, provisions for rebuilt engines, enhanced recall requirements, and a fee-based fleet average emissions program to ensure that equipment turns over to lower emitting models at normal turnover rates. EPA received significant comments on this section and has revised or deleted provisions in all of these program elements in response, as discussed below.

(2) Oxides of Nitrogen Standards. The proposal included a NOx standard of 1.5 g/bhp-hr for new heavy-duty nonroad engines sold for use in the South Coast and Ventura FIP areas, and 2.5 g/bhp-hr for those sold for use in the Sacramento FIP area. These standards were proposed to be effective with the 1999 model year.

EPA received numerous comments on the proposed NOx standards. The engine and equipment makers, equipment users associations, and the California Air Resources Board commented that the proposed standards were unreasonable for many equipment applications. Engine and equipment manufacturers further argued that: (1) even in those limited applications for which engines meeting these standards might be available in time, alternative-fueled designs would be required, (2) the market in the FIP areas for many equipment types is too small to justify the costly

redesign effort for this equipment, and (3) some manufacturers would therefore partially or completely leave these markets. The feasibility of the proposed NOx standard, even for alternative fueled engines, was questioned by many, including a natural gas supplier. Fire departments requested exemption from the proposed standards for emergency equipment because of safety and deployability concerns associated with alternative fuels.

Some commenters, notably the Equipment Manufacturers Institute and several local equipment users associations, also questioned the projected nonroad equipment fleet growth rates used by EPA in the FIP proposal. They argued that lower or even negative growth rates are justified, and that this obviates the need for a stringent standard, since overall emissions from this source would thus be much less than projected in the proposed FIP.

In addition to comments on the feasibility of and need for the proposed standard, EPA received many comments arguing that new standards for this equipment should be set on a nationwide basis. Supporters of this approach included the engine manufacturers, equipment users associations, CARB, the Maritime Coalition for Clean Air, the California Department of Food and Agriculture, the City of Los Angeles, and the Sacramento Area Council of Governments. Commenters in this group felt that stringent California-only (and especially FIP-area-only) standards would encourage manufacturer pullout due to limited markets, would disadvantage California businesses and farms

compared to out-of-state producers using less expensive equipment, and would result in enforcement problems as people imported cheaper, higher-polluting equipment from other States. In its SIP submittal, CARB proposed that EPA set a nationwide NOx standard for new engines of 2.5 g/bhp-hr, effective in 2005, and indicated that this standard and schedule would also be adopted for California equipment in the SIP. Based on EPA's analysis of the comments and on the approach being finalized for on-highway heavy-duty engines, EPA has concluded that implementing the proposed standards in 1999 is not feasible. Alternative fuels would most likely be required, at least in some applications. Considering the very large number of equipment types involved, the relatively small FIP area sales volumes for some of this equipment, the need for major changes to packaging design and refueling infrastructure to accommodate alternative fuels, and EPA's parallel decision not to finalize this standard for on-highway vehicles (for reasons discussed in section III.D.3), EPA is not finalizing the proposed standard.

EPA also agrees that national standards provide a reasonable way of dealing with the market disruption and enforcement problems identified by commenters. In fact, EPA discussed the possibility of a national NOx standard more stringent than the recently promulgated 6.9 g/bhp-hr standard in the final rule establishing that standard.

EPA is therefore announcing its intent to pursue through a separate notice and comment rulemaking a national NOx standard

for compression-ignition (CI) and spark-ignition (SI) nonroad equipment rated at 37 kw (50 hp) and above, and is finalizing a NOx standard of 4.0 g/bhp-hr (5.4 g/kw-hr) in the FIP for new engines sold for use in California. Consistent with the approach taken in the recently promulgated national rule for large nonroad CI engines (59 FR 31306, June 17, 1994), the California FIP standard for heavy-duty nonroad engines will be implemented according to a phase-in schedule by gross power output as follows:

130 kw to 560 kw and manufactured on or after January 1, 2002;
75 kw to 130 kw and manufactured on or after January 1, 2003;
37 kw to 75 kw and manufactured on or after January 1, 2004;
560 kw and greater and manufactured on or after January 1, 2005.

The 4.0 g/bhp-hr standard represents a 40 percent reduction in NOx emissions compared to the 6.9 g/bhp-hr standard being implemented to gain reductions from uncontrolled levels. As described below, EPA believes that this standard can be met by diesel, gasoline, and alternative-fueled engines without causing the economic disruptions mentioned above.

Of the various engine types used or contemplated for use in large nonroad engines, the diesel-fueled engine is by far the most commonly used, but has also provided the greatest challenge in controlling NOx. Nevertheless, recent design progress, particularly in on-highway applications, has been encouraging.

Certification data indicates that over 40 percent of 1994 on-highway heavy-duty diesel engine families have been certified to NOx levels of 4.5 g/bhp-hr or less, and 7 percent have been certified to NOx levels of 4.0 g/bhp-hr or less. Under current EPA regulations, all new engines in this category will need to demonstrate compliance with a 4.0 g/bhp-hr NOx standard beginning in 1998 (55 FR 15781, March 24, 1993). EPA believes that progress in the development of these engines, combined with their similarity to large nonroad engines, provides a high degree of confidence that nonroad diesel engines can be designed to comply with the 4.0 g/bhp-hr standard. The implementation schedule provides four to seven years of leadtime after the effective date of the 4.0 g/bhp-hr on-highway standard to apply knowledge gained in meeting this standard to the design of nonroad engines.

As pointed out by commenters, there are special considerations in applying on-highway engine technologies to nonroad engines and equipment. Some technologies that might be employed in achieving NOx levels below 4.0 g/bhp-hr on-highway may be infeasible in the near-term for nonroad engines. In addition, nonroad engines must fit a wide variety of equipment applications with an equally wide variety of demanding operating environments and modes. As discussed below there are test procedure considerations which also play a role in the feasibility of this standard.

The additional challenges present in designing engines for nonroad applications and the sheer number of applications that

must be designed for argue against imposing very stringent standards much before the mid-2000's, as recognized by CARB in its proposal for standards effective in 2005. Unfortunately, considering the slow pace of turnover in the nonroad equipment fleet, new standards must be implemented as early as possible to make any contribution to the FIP area attainment demonstrations, especially in Sacramento and Ventura County which must demonstrate attainment by 2005. For this reason, EPA believes that the best approach is to implement a 4.0 g/bhp-hr NOx standard according to the indicated schedule, rather than a more stringent standard implemented later as proposed by CARB. Because the approach being taken in the final rule will not force reliance on alternative fuels and is not expected to create special challenges in the design or fueling of emergency equipment, EPA has concluded that special exemptions for emergency equipment are not warranted.

(3) Hydrocarbon Standards. EPA proposed to set a standard of 1.2 g/bhp-hr for exhaust hydrocarbon emissions, and solicited comment on adopting a more stringent standard depending on the outcome of EPA's national rule for large nonroad CI engines. That rule finalized a hydrocarbon standard of 1.3 g/kw-hr (1.0 g/bhp-hr) for CI engines over 130 kw (175 hp), effective beginning in 1996. This standard, which is the same as that adopted by CARB for engines in this category, was designed to require relatively minor changes to existing engines.

Very little comment was received on the proposed exhaust

hydrocarbon standard. Southern California Gas Company commented that EPA should base its exhaust hydrocarbon standard on nonmethane organic gas (NMOG) and set the standard at 0.2 g/bhp-hr, arguing that, by adjusting for reactivity of exhaust components, NMOG provides a more appropriate measure of emissions. In the case of natural gas vehicles, much of the exhaust hydrocarbons would have a very low reactivity. Finally, Southern California Gas said that NMHC standards for natural gas engines should not be set at a level below 0.5 g/bhp-hr (excluding ethane).

EPA is finalizing the 1.2 g/bhp-hr (1.6 g/kw-hr) NMHC standard for nonroad heavy-duty engines, using the same implementation schedule and test procedures described above for the NOx standard. However, for engine types subject to the more stringent 1.0 g/bhp-hr standard, under existing EPA or CARB regulations, the above FIP standard will not apply.

As part of the effort to revise national standards for nonroad engines discussed above, EPA intends to consider the level of the NMHC standard. The NMHC standard of 0.4 g/bhp-hr being finalized in this FIP for on-highway heavy-duty engines would be a starting point for evaluating the potential for cost-effective control of NMHC emissions from the nonroad engines. Because the national NMHC standard for nonroad engines, if promulgated, is expected to be more stringent than 1.2 g/bhp-hr, and because consistent nationwide standards for nonroad engines can help to minimize increases in engine costs, EPA intends its

final national standard, if promulgated, to supersede less stringent California-specific standards.

Similar to on-highway heavy-duty engines, EPA also proposed to require that nonroad heavy-duty engines have minimal evaporative emissions without using an active control system. EPA included this requirement because it was concerned that the NOx standard would be more easily met by gasoline engines than by diesel engines. Any resulting shift in the heavy-duty fleet from diesel to gasoline would increase hydrocarbon emissions because of the evaporative emissions from gasoline.

Manufacturers commented that the low evaporative emissions requirement would be unfair in that it would effectively exclude the use of gasoline-fueled engines in nonroad applications.

EPA believes that, by finalizing a less stringent standard in the FIP than the one proposed, there will be no clear advantage to using gasoline engines instead of diesel engines for heavy-duty nonroad applications. Therefore, the driving force for a fleetwide trend toward greater use of gasoline for heavy-duty engines has been removed. Because this anticipated trend had been the basis for the proposed low evaporative emissions provision, EPA is not including this provision in the final rule.

(4) Test Procedures. In the proposed FIP, compliance with the new standards would be measured on the 8-mode steady state test procedure proposed at that time in the national rulemaking for large nonroad CI engines, since finalized (59 FR 31306, June 17, 1994). Test fuels would be based on currently applicable

California specifications. Comment on this proposed approach was supportive, though sparse. Some makers of specific engines, especially marine engines, thought that the test cycle was not the most representative one.

As proposed in the proposed FIP, EPA will conduct certification and enforcement testing of nonroad engines regulated under this program using the Federal nonroad procedures for NOx and hydrocarbon emission measurement finalized in the national rule for large nonroad CI engines, and using a test fuel based on current applicable California specifications. The eight-mode steady state duty-cycle and other test procedures will apply to both CI and SI engines, regardless of fuel type. Exhaust hydrocarbon measurements will be quantified as NMHC or other fuel-specific equivalents, such as organic material hydrocarbon equivalent (OMHCE) for methanol engines. Assembly line testing will be performed under EPA's Selective Enforcement Audit testing program as described in 40 CFR part 89 subpart F.

As discussed in the FIP proposal, testing done according to the steady-state procedure may not result in engine designs that achieve adequate control of all regulated pollutants over the wide range of operating characteristics experienced by these engines. Therefore, and as further discussed in the national rule for large nonroad CI engines (59 FR 31306, June 17, 1994), EPA intends to examine this issue in the upcoming national rulemaking for this category of engines, and to adopt a transient test procedure in that rulemaking as appropriate for ensuring

adequate control of all regulated pollutants. EPA expects that the national rule, if adopted, would supersede the California FIP program provisions for these engines, including standards, test procedures, and test fuels.

(5) Applicability. The proposed FIP proposed the application of this program to CI and SI nonroad engines rated at or above 37 kw, with the exception of engines used in aircraft, locomotives, underground mining equipment, SI engines used in recreational marine engines and low speed CI (diesel) engines used in oceangoing ships. Most of these engine categories are dealt with in other portions of this FIP. The proposal applied only to engines sold for use in the FIP areas, although comment was requested on applying the control program statewide.

Commenters indicated that the FIP area market is too small to support the large development effort needed to produce low-emitting engines and associated equipment. In fact, many commenters supported only national standards for this category of engines, as detailed in the discussion of the NOx standard, above. Commenters also opposed the regulation of marine diesel engines under the FIP standards because they said special concerns for space and safety made alternative fuels especially troublesome for these engines.

EPA is finalizing the heavy-duty nonroad engine program for all equipment types covered in the proposed FIP except CI marine engines. The proposed FIP excluded only the low-speed CI marine engines used in ocean-going ships. EPA is also excluding the

higher speed CI marine engines because these engines were not regulated in the final national rulemaking for large nonroad CI engines (59 FR 31306, June 17, 1994), owing to a number of special issues. Instead, EPA has proposed to regulate these engines as part of the proposed national rule for marine engines (59 FR 55930, November 9, 1994). Although that proposal discusses progress made in resolving the issues, EPA feels it is inappropriate to finalize standards for these engines as part of the FIP until it has had an opportunity to consider the broader public comment on the issue expected in response to the national standard. EPA does intend to consider including these engines as part of the planned national rulemaking.

For reasons given in the above discussion on the NOx standard, EPA intends to propose national standards for nonroad engines. These reasons and the comments EPA received concerning the viability of a limited market approach also apply to the consideration of FIP-area versus statewide application of the standards. Although EPA requested comments on this issue, very few were received distinct from the more general issues. Therefore, EPA is expanding the applicability of the heavy-duty nonroad FIP provisions from equipment in the FIP areas to all equipment statewide.

EPA received several comments on the treatment of nonroad engines used for military and national security purposes. The proposed FIP stated that "(t)he exemption provisions of subpart J of Part 89 of this chapter apply to the requirements of this

section." Because these Subpart J regulations include an exemption for purposes of national security, the FIP regulations therefore also include this particular exemption.

Note that if a nonroad engine class receives a national security exemption under the national rules, this exemption will automatically apply to engines in this same class when used in areas covered by the FIP, and no separate exemption request for the FIP areas is necessary. Manufacturers may request, and EPA will review and grant if appropriate, a national security exemption for any engines regulated under the FIP that, although they could meet applicable national standards (and therefore do not require exemption from the national rules), do not meet applicable FIP standards.

Additionally, EPA is announcing its intent to include an exclusion for nonroad engines used for combat purposes ("combat exclusion") to upcoming national rules on large and small nonroad engines, marine engines, and locomotive engines. A combat exclusion for on-highway vehicles is already in place (see 40 CFR section 85.1703(a)(3)). Under this exclusion, vehicles which exhibit "features ordinarily associated with military combat or tactical vehicles such as armor and/or weaponry" are excluded from provisions of the Clean Air Act. By this action, EPA will ensure consistency between the on-highway program and the various nonroad programs with respect to the combat exclusions. Note that any nonroad engine which is covered by the combat exclusion in the national rules will automatically be covered by the combat

exclusion when the nonroad engine is used in areas covered by the FIP.

(6) Recall Requirements. EPA proposed enhanced recall programs for light- and medium-duty vehicles, heavy-duty on-highway engines and nonroad engines over 37 kw. For reasons described in the light-duty vehicle section, III.D.1., EPA is not retaining the enhanced recall programs for any of these vehicles and engines. Heavy-duty nonroad engines will instead be subject to EPA's existing recall program described in 40 CFR Part 89 subpart H.

(7) Fleet Requirements. In the proposed FIP, EPA recognized that cost increases and fuel availability concerns associated with the proposed standards might lead to a reduction in the rate of equipment turnover and a corresponding reduction in the environmental benefit. Therefore, EPA proposed an annually declining fleet average NOx standard to ensure turnover at historical rates. Owners of affected nonroad equipment would be required to annually demonstrate attainment of the fleet average standard or pay a surcharge, and to affix EPA-supplied labels on the equipment to prove compliance. No surcharges would be required if turnover continued at normal rates.

Commenters on the fleet average program, primarily equipment users, opposed the program as burdensome, unnecessary (due to low anticipated growth), and unenforceable.

In setting the new engine NOx standard at 4.0 g/bhp-hr instead of the proposed 1.5 g/bhp-hr, and delaying the

implementation date of the new standard, EPA has eliminated concerns about major price and fuel supply discontinuities. As a result, a significant decrease in the turnover rate is not expected and the fleet averaging program is not being finalized. CARB and the affected local governments are considering programs aimed at encouraging faster turnover and retrofit of these engines because they are significant contributors to the pollution inventory, and are replaced by cleaner engines very slowly. EPA strongly supports these efforts and in fact helped finance one in Sacramento. EPA may, in the future, consider measures aimed at achieving higher equipment fleet turnover rates if the need for emission reductions from nonroad sources warrants such measures.

(8) Engine Recertification Program. EPA proposed a rebuild program for nonroad and on-highway heavy-duty engines to help control in-use emissions after the end of the statutory useful life of those engines. As described in section III.D.3.c., EPA is finalizing the recertification program for on-highway engines because the 2.0 g/bhp-hr NOx standard will very likely require the use of emission control technologies such as catalysts and exhaust gas recirculation. Such technologies are expected to be more prone to in-use deterioration than technologies used to meet less stringent standards.

Because EPA is finalizing a nonroad engine standard that is less stringent than the proposed 1.5 g/bhp-hr standard, concerns about emissions control deterioration are mitigated somewhat, but

not eliminated. As there is little experience with technologies capable of meeting the 4.0 g/bhp-hr standard, EPA believes that programs aimed at ensuring adequate control beyond the statutory useful life, especially for engines that are rebuilt, may be warranted. Rebuilt nonroad engines pose a special concern because rebuilders may have incentive to deviate from the original engine configuration if it is cheaper to do so and there is no legal prohibition. However, there is reason to believe that engines meeting the 4 gram standard will have very durable emissions control equipment and electronics which require rebuilding exactly to original specifications.

Although EPA remains concerned about possible in-use emissions deterioration, it does not believe that it would be appropriate to adopt the recertification program for nonroad engines in today's final rule. The proposed nonroad engine recertification program would add a major burden to equipment owners throughout California, requiring that they annually register their equipment with EPA, maintain hours meters, and schedule overhauls by or under the supervision of certified companies before useful life periods expire or face stiff penalties.

Because the need for the program is uncertain and because the program would place a large burden on equipment owners and others, EPA is not adopting the recertification program for nonroad engines in the FIP. EPA plans to re-evaluate nonroad emissions control technology and the need for a nonroad engine

program to ensure long-term emissions control in developing a national NOx standard for nonroad engines over 50 hp (37 kw).

(9) Legal Authority. EPA is promulgating these standards for California heavy-duty nonroad engines rated at greater than 37 kw (50 hp), with the exception of farm and construction equipment rated at less than 130 kw (175 hp), under its authority to "stand in the shoes of the State" for purposes of a Federal Implementation Plan (see the proposed FIP). Under Section 209(e)(2) of the Act, California can adopt and enforce its own emission standards for new nonroad vehicles (with the exception of the preempted categories in Section 209(e)(1)), if California determines that such standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards, and if EPA finds that (1) California's determination of protectiveness is not arbitrary and capricious; (2) California needs such standards to meet compelling or extraordinary conditions; and (3) California's standards and accompanying enforcement procedures are consistent with Section 209(e). Section 209(e) also authorizes other States to opt-in to the California standards.

CARB has adopted emissions standards for lawn and garden and utility engines. EPA is currently reviewing CARB's request to EPA for authorization of these standards under Section 209(e)(2). CARB also has proposed emission standards for other classes of nonroad vehicles.

All States, including California, are preempted by the Act

from adopting and enforcing standards relating to emissions from new farm and construction equipment below 175 hp (130 kw).

Therefore, EPA is promulgating this standard for farm and construction equipment between 37 kw (50 hp) and 130 kw (175 hp) under its general FIP authority under Section 110(c) to take action to cure a State's planning inadequacy in any way that is not clearly prohibited by statute. The legal basis for this authority is discussed more fully in the proposed FIPs.

Interested readers should refer to Section III.A.4.c. for more information about the ability to credit these measures in SIPs.

5. Programs for National Transportation Sources.

a. Aircraft/Airports.

(1) Introduction. The FIP proposals included measures to reduce air pollutant emissions from sources associated with airport operations in the FIP areas: (59 FR 23355, May 5, 1994) Air pollutants resulting from airport operations are emitted from several types of sources: aircraft main engines and auxiliary power units (APUs); ground support equipment (GSE), which include vehicles such as aircraft tugs, baggage tugs, fuel trucks, maintenance vehicles, and other miscellaneous vehicles used to support aircraft operations; and ground access vehicles (GAV), which includes vehicles used by passengers, employees, freight operators, and other persons commuting to and from an airport. EPA's previous estimates were that aircraft engines comprise approximately 45 percent of total air pollutant emissions from

airport operations; GAV account for another 45 percent, and APUs and GSE combined make up the remaining 10 percent.

These sources were addressed in four separate program elements in the proposal, corresponding to the four general categories of aircraft operations in the FIP areas: 1) commercial aircraft operations, 2) military airbase operations, 3) general aviation operations, and 4) public aircraft operations.

Today's action for each of these categories is discussed in order below. In summary, however, EPA is only promulgating specific requirements for GSE and APUs for commercial aviation. No special regulatory requirements for military airbases, general aviation aircraft, or public aircraft are being finalized in today's action.

(2) Program Element - Commercial Aviation.

(a) Summary of Proposal. Emissions sources associated with commercial aircraft are concentrated in several specific locations in the FIP areas. The South Coast Air Basin has five major commercial airports (Los Angeles, Ontario, Burbank, John Wayne, and Long Beach). The Sacramento Air Basin includes a single commercial airport, while the Ventura control area has only minimal commercial aviation activity at the present time.

The proposed FIP control strategy for commercial aircraft operations established a very aggressive set of specific emission reduction targets to be achieved through various emission reduction measures, chosen at the discretion of the regulated

community. The proposed strategy addressed the emissions from main aircraft engines, APUs, and GSE. GAV emission reduction programs were not included in the FIPs' proposed aircraft/airport measure and are most appropriately implemented by the local air quality management districts. An alternative approach considered at the time of the original proposal was the development of specific command-and-control requirements. EPA did not propose this approach because the high variability of available emission mitigation measures make such prescriptive programs poorly suited to aircraft operations.

The proposed control program, therefore, relied on a bubble concept for reducing emissions resulting from commercial aircraft operations in the FIP areas. Under the proposed program, commercial aircraft operators (e.g., air carrier, air taxi, and charter services) were required to achieve a series of declining emissions targets over the attainment demonstration period. The regulatory program included emissions from operations of aircraft engines, APUs, and GSE that were owned, leased, or contracted by a commercial aircraft operator. The targets were expressed in terms of pounds of emissions per "passenger equivalent unit (PEU)." These emission limits were based on emissions reduction objectives consistent with the stationary source cap program included elsewhere in the proposed FIPs, with reduction ranges of 25-45 percent for VOC emissions and 35-45 percent for NO_x emissions from a 1990 baseline. Such emissions reductions were ambitious, particularly in light of the increased emissions

expected to result from forecasted growth in FIP-area air traffic.

The pounds-per-PEU targets included in the proposed FIP were derived from the limited data that were available to EPA at the time of the proposal's development. The proposed program provided for EPA to calculate final targets based on required reports from commercial aircraft operators of emissions data for a designated baseline year. Compliance with these final targets was then to be assessed on a seasonal basis using compliance reports submitted by the regulated community. The proposed program did not mandate specific emissions reduction measures to be taken by commercial aircraft operators, who were free to reduce their emissions using methods that best suited their particular situations.

When EPA designed the proposed control program, it recognized that there are many unique market, technological, and safety factors that affect commercial aircraft operations. The program represented an innovative effort at controlling air pollutant emissions from an essentially uncontrolled emissions source category. As such, the program raised a number of challenging legal and jurisdictional issues for which EPA requested comment in the proposal.

(b) Response to Comments.

(1) Comments. The aviation industry and other affected parties were asked to comment on the proposed regulation. The following significant comments were received:

Economic/Technical Impacts The overwhelming concern of many commenters was that the proposed NO_x reduction goals were extreme. Commenters stated that the only means by which these goals could be attained was through implementation of all emissions reduction measures discussed as voluntary in the proposed FIP as well as flight operation cutbacks. That would lead to substantial adverse economic impacts in the FIP areas. In addition, many commenters stated that the stringent emissions reduction goals eliminated market-oriented compliance flexibility, since aircraft operators would be unable to generate marketable credits as a result of the substantial emission reduction requirements. EPA agrees that the proposed NO_x reduction targets were ambitious. Also, the Agency acknowledges that if the targets were promulgated without revision (e.g., especially at the upper end of the ranges), activity reductions may have been necessary to ensure compliance in addition to implementation of other emissions reduction measures.

While there were few comments on the structure of the commercial aircraft regulation itself, some commenters raised concern that the emissions performance measure (lbs/PEU) was untested and likely would need refinement to effectively achieve the goals of the regulation. EPA recognized the novel nature of the PEU concept and requested comments in the proposal to evaluate the program's feasibility.

Many commenters expressed concern at the considerable recordkeeping and reporting burden envisioned in the proposed

program for commercial aircraft operators, stating that requirements such as compliance plans, baseline reports, and annual compliance reports are unjustified and unnecessary. EPA realizes that many regulations impose significant recordkeeping and reporting requirements on both the regulated community and the enforcement agencies. EPA attempts to minimize this burden as much as possible while collecting sufficient data needed to assure compliance.

Industry commenters indicated that several of the mitigation measures in the proposal (e.g., single/reduced engine taxiing, derated/reduced power takeoff) already are in wide-spread use in the FIP areas. As such there is limited opportunity for additional use and thus limited environmental benefit. Both the Air Transport Association of America (ATA) and the individual carriers that submitted comments expressed their willingness to exploit these techniques to the fullest extent feasible, as long as their use remains at the discretion of the pilot-in-command, who is responsible for maintaining the safety of the aircraft and passengers. EPA agrees that any emissions reduction measures must be implemented in a manner consistent with passenger and aircraft safety. EPA intended for the use of such measures to be discretionary, with aircraft operators to be credited for any emissions benefits gained from implementation. In light of the changes to the proposed rule that are described today, EPA encourages the aviation community's continued voluntary efforts to implement these and any other emissions reduction measures to

the maximum extent feasible.

Several commenters questioned the proposal's estimates of emissions attributable to GSE and APU operations, stating that these estimates were considerably lower than those experienced in practice. Comments were also received regarding aircraft emissions inventory (i.e., baseline inventory, growth rates, and aircraft fleet mix). In the proposal, EPA noted that the information concerning these operations and the emissions data used to develop the proposed rule were limited. Therefore, EPA proposed a baseline emissions report requirement to be used by EPA to establish the final emissions reduction targets. The ATA commissioned a study of these aviation emission categories, which was submitted as part of its comments. The Agency welcomes the effort by ATA to improve the GSE emissions data base, and has used the new information in developing the revised aviation control measures where possible.

Several commenters also indicated that onroad-certified vehicles should be included in the FIP's definition of GSE subject to the rule's requirements. EPA has included such vehicles in the revised aviation control measure described later in this section.

Airlines stated that operating a "clean fleet" of aircraft in the FIP areas would be difficult if not infeasible because of economic concerns related to equipment purchases and market demands, and further indicated that specific aircraft cannot be devoted to particular airports. EPA believes that a clean fleet

program for aircraft in the FIP areas, while challenging, may be feasible. However, such a program is not being included in today's action for the reasons discussed later in this section.

A few commenters stated that the Ventura and Sacramento control areas should be removed from the aircraft emissions control strategy because of the claimed severe nature of the strategy's economic impact. Comments were also received stating that the low level of emissions from commercial aviation in these areas did not justify regulation. These comments were predicated on the substantial emissions reductions and control measures that the original proposed rule would have required. By contrast, the control strategy finalized today does not entail such measures. EPA believes the regulatory requirements that will apply to civil aviation are both economically reasonable and cost effective. In light of the need to obtain cost effective emission reductions in each FIP area both now and in the future, commercial aviation in the Ventura and Sacramento control areas are subject to the regulations being promulgated today.

Legal/Jurisdictional Issues Because EPA has not finalized the bubble approach advanced in the proposed rulemaking, the issues raised by commenters addressing legal and jurisdictional concerns with that program are moot. EPA's new approach, which focuses on GSE and APUs, avoids areas of legal and jurisdictional controversy. The new focus is also consistent with the suggestions of many of the same commenters that otherwise raised legal and jurisdictional issues.

A number of commenters addressed issues involving the treatment of foreign air carriers under EPA's proposed program. A group of foreign governments and the European Commission submitted comments voicing concerns about EPA's proposed commercial aviation program, and requested that the proposal be withdrawn. Since EPA is today significantly revising its proposed approach, we believe that the objections raised to the discarded bubble program have now been rendered moot. EPA believes that its new program is consistent with the requirements of international and bilateral agreements, and that it treats foreign carriers equitably and in a non-discriminatory fashion.

Alternative Strategies Several commenters made recommendations on actions to be taken by EPA. The key recommendations include:

- (1) Develop a requirement for alternative fuel use by GSE,
- (2) Limit use of APUs through gate electrification and preconditioned air,
- (3) Limit the aircraft flying into FIP areas to the cleanest of the fleet, and
- (4) Establish national emission standards for jet engines.

Several commenters indicated their desire to see EPA implement an averaging and trading scheme in the final rule to provide aircraft operators with flexibility in choosing compliance options. EPA believes that the rules, which are being promulgated today, will eliminate the need for an averaging and trading program.

DOT indicated its willingness to facilitate airport and terminal modifications through Federal grant funds to airport owners and operators as a means for accommodating and expediting recommendations (1) and (2) above. Federal grant funds will be made available by FAA to the extent that specific projects are eligible for Federal airport grant program assistance. DOT also committed in its comments to encourage the maximum feasible use of lowest emission aircraft by air carriers in the FIP areas, which is consistent with recommendation (3). EPA appreciates DOT's efforts to identify emissions reduction opportunities in the aviation sector.

(2) Overall Response. Several changes are made to the rule in response to these comments. EPA is dropping the bubble approach that includes aircraft due primarily to the lack of public support for such a program. In its place, EPA has developed command and control regulations for alternative fuel requirements for GSE and limitations on APU usage. This latter program was overwhelmingly supported in the public comments. The Agency may, at a later time, consider a clean fleet requirement (see section III.D.5.(2) (f)). No new national emission standards are proposed at this time because the significant technical and regulatory issues and nationwide implications of such standards should not be addressed within the context of a FIP directed at one State. Moreover, their benefit within the FIP time frame is limited due to the long lead time required by engine manufacturers to develop new low-NOx emission engines, the

slow turnover in the fleet, and significant technical and economic issues that must be adequately addressed. EPA intends to seek comment on engine emission standards in a future notice of proposed rulemaking.

(c) Final Rule - Key Regulatory Elements. This section summarizes the changes to the proposed regulation. The bubble approach set forth in the proposal has been dropped. In its place are command and control regulations directed at GSE and APUs.

EPA intends for the regulatory provisions discussed today to apply to the five major commercial airports currently operating in the South Coast FIP area (Los Angeles International, Ontario International, John Wayne, Burbank, and Long Beach); Sacramento Metropolitan Airport; and Oxnard/Ventura County Airport. These airports are currently operating under a Part 139 certificate issued by the U.S. Department of Transportation. Any other FIP area airport that initiates significant commercial air carrier activity in the future, and is certified under a Part 139 certificate, will also be subject to these requirements.

The GSE and APU focus was broadly recommended by the majority of commenters. The Department of Transportation in its comments recommended, as near-term measures, conversion of GSE to alternative fuels, and reduced use of APUs through gate modification:

"DOT believes that application of the GSE and APU measures will ensure an air carrier contribution to emission

reduction that is equitable to other modes. DOT supports the application of these measures as part of a command and control strategy....FAA will assist EPA in developing plans and a reasonable implementation schedule for these measures."

The Air Transport Association (ATA) and the Air Freight Association similarly encouraged EPA to adopt this regulatory approach. The ATA stated:

"The airlines are ready and willing to pursue, to the extent technologically feasible, development of a schedule for conversion of GSE at the five South Coast basin airports to alternative fuels or electrical power, such as that being promoted by the Los Angeles Department of Airports. Such measures would reduce airline emissions overall...."

ATA also commented:

"As with GSE conversion, EPA should discard the lbs/PEU performance standard and work with the airlines and airports to design a realistic program for reducing APU usage in the South Coast Basin."

The regulatory focus on GSE and APUs was also among the control measures suggested by the Natural Resources Defense Council, the Coalition for Clean Air, and the Sierra Club in their comments on the FIP.

Nonetheless, EPA has determined that the changes to its proposed program are too significant, and the implications for the aviation industry too important, to construe them as a

"logical outgrowth" of the proposed rulemaking, even though the broad outlines of the final program were suggested by commenters. EPA finds that good cause exists to issue the changed regulatory program as "interim final" rules, on which further comment will be taken after promulgation. (For more information on the Interim Final Rulemaking, see the discussion in Section III.A.7.a. above.)

The substantial comments that EPA received on its proposed rulemaking prompted the Agency to undertake a thorough overhaul of the proposed rule. Given the court-ordered deadline, it was impracticable for EPA to take additional public comment on its revised control measures prior to the date set for final promulgation. Moreover, EPA has found that it would be contrary to the public interest to let the original proposal take form as final rulemaking. Since EPA, in light of the comments, has concluded it should not adopt at this time the approach advanced in the proposal, it would confuse and be disruptive to the public and regulated industry to finalize the proposal. Promulgating the changes as interim final rules will allow EPA to adopt the regulations it believes best serve the industry and the public at this time, while allowing for follow-up proceedings to entertain public comment on whether the interim final rule should be revised.

(1) Ground Service Equipment (GSE). This regulation applies to GSE owner/operators (e.g., commercial aircraft operators and fixed base operators (FBO) servicing commercial

aircraft). EPA's intent is to require the use of zero-emission GSE vehicles wherever possible. In effect, this is likely to mean electrification of GSE vehicles. Electric technology for is currently available for many GSE applications and electric and other zero-emitting technologies will be developed over the course of the FIPs' control period. This regulation therefore requires the conversion to zero-emission power of all GSE, other than certain specific equipment categories discussed below. Auxiliary engines are subject to the same minimum requirements of performance as the engines supplying motive power.

EPA's intent with this GSE regulation is to control emissions from GSE supporting aircraft operations (including such activities as maintenance), and not to impose burdensome requirements on small equipment used in areas and applications removed from closely supporting the operation of commercial aircraft. For that reason, all mobile sources operating on the airport and powered by engines less than 20 horsepower are excluded from the zero-emission power requirement, unless they are auxiliary engines on GSE otherwise covered by this rule.

The interim final rule establishes a phased schedule for implementing this conversion strategy, based on percentages of a GSE operator's total number of GSE units. This is consistent with a recommendation from the Air Transport Association of America. EPA also considered two other options for this phased strategy: percentage of total GSE brake horsepower-hours and percentage of total GSE brake horsepower. The former option was

rejected as requiring excessive recordkeeping. The latter option, recommended by American Airlines, was rejected as having no obvious benefit beyond that associated with the selected strategy, which has the support of many air carriers.

EPA's schedule for converting GSE from conventional fossil fuels to zero-emission power is generally consistent with a similar program recommended by American Airlines. It is a more aggressive program than proposed by ATA, however. The schedule for converting GSE is presented below:

1997 - 44 percent conversion to zero-emission power

2000 - 62 percent conversion to zero-emission power

2005 - 90 percent conversion to zero-emission power

2010 - 100 percent conversion to zero-emission power;

where the percentages refer to the total number of regulated GSE vehicles in each owner/operator's fleet. The GSE to be converted to zero-emission power is approximately 75 percent of the total GSE population.

EPA believes this schedule is technically feasible based on the variety of electric equipment already in use or which appears readily available from existing manufacturers. Several airlines presently use electric aircraft tugs, baggage tugs, carts, forklifts, and cargo lifts. Other equipment types that currently are not commonly electric, such as belt loaders and lavatory carts are clearly amenable to electrification. Improvements to current or anticipated electric vehicle technology may be required for the most demanding applications, such as long haul

cargo or aircraft tugs, which represent less than 10 percent of the total GSE to be converted. The conversion schedule provides adequate leadtime to address these more difficult applications. The schedule allows 15 years to achieve 100 percent conversion.

Ground power units and air start units, which have very high power requirements and/or long duty cycles, are currently being exempted from the zero-emission power requirements. Electric vehicle technology that can meet these requirements is not commercially available now and can not clearly be anticipated in the near future. However, all gates and aircraft parking locations will be required to have fixed ground power systems and preconditioned air supplies, as explained below, so these units will only be needed for emergency back up. Use of these units will not be allowed on a routine basis. Equipment used exclusively for emergency response actions, such as firefighting vehicles, also are exempt from the electrification requirements. These units will comply with the otherwise applicable State or Federal emission control requirements.

Electric technology for vehicles certified for on-road use and powered by engines between 120 and 230 horsepower, which are used as GSE, may also not be available in the foreseeable future in all instances. This reflects the long distances that these vehicles are generally required to cover in on-road applications. Rather than require that zero-emitting applications be developed just for GSE purposes, EPA will rely upon Inherently Low Emission Vehicle (ILEV) fleet requirements, as described in Section

III.D.1.i of this rulemaking, as a means of reducing emissions from GSE in this category.

Non-emergency GSE powered by engines between 120 horsepower and 230 horsepower that are certified for on road use must meet the ILEV requirements being promulgated elsewhere in this notice. The initial implementation dates for this requirement are consistent with those for the ILEV fleet program. For light-duty GSE, this requirement will be implemented on the following schedule:

- 1999 - 50 percent conform to ILEV emission standards;
- 2005 - 100 percent conform to ILEV emission standards.

For medium- and heavy-duty GSE, this requirement will be phased in as follows:

- 2000 - 30 percent conform to ILEV emission standards;
- 2005 - 100 percent conform to ILEV emission standards.

This equipment represents approximately 25 percent of the total GSE population.

(2) Auxiliary Power Units (APU). To minimize the use of APUs, 400 hertz (Hz) ground power and preconditioned air must be available at all gates and locations where commercial aircraft routinely park with passengers aboard (e.g., gates). A supply of 400 Hz ground power is required at all other parking locations where commercial aircraft are routinely serviced (e.g., maintenance locations and overnight parking positions). Commercial airports in the three FIP areas are required to supply these services at all such gates and parking locations under

their direct control. For gates and parking locations that are under the control of airlines through long term leases or other agreements, where the airlines are responsible for the physical equipment, the leaseholder is responsible for supplying the necessary ground power and preconditioned air. The airports must ensure the electricity supply to the airport and to individual gates is adequate to meet the need for ground power and power to operate the preconditioned air units in addition to recharging the electric GSE.

The schedule for installing the necessary electric supply and preconditioned air is as follows:

1999 - All gates located at permanent airport terminals must have fixed ground power and preconditioned air;

2002 - All other aircraft parking locations including remote gates and maintenance positions must have fixed ground power, and all parking locations where passengers may be present also must have preconditioned air.

It should be noted that the initial requirement for supplementing the electricity supply to existing gates (1999) is two years after the initial requirement for converting 44 percent of the GSE fleet to zero-emitting units (1997). This is reasonable because the existing power supply should be adequate to meet the needs of this equipment. Primary charging can take place overnight when other airport power demands are minimal and power rates are lowest. Also, opportunity charging would occur throughout the day whenever the equipment is idle. For example,

gate electricity is needed to move a passenger access bridge to the aircraft upon its arrival and for aircraft auxiliary power requirements while the aircraft is docked at the gate. Other gate services requiring electric power also would be active while the aircraft is at the gate. This is the time during which the GSE is away from the gate actively servicing the aircraft and would not be recharging. Opportunity charging would take place only when the aircraft is away from the gate and power drawn for other services is low. Therefore, existing power supplies at or near the existing gates should be adequate to meet the charging requirements for the initial increment of GSE electrified as a result of this rule.

It is possible that an airport operator may have committed funds for a major expansion or alteration of a permanent terminal on a schedule that conflicts with that discussed above for installation of ground power and preconditioned air. EPA does not intend for an airport operator in that circumstance to undertake unnecessary installation of ground power and preconditioned air in compliance with this rule, when such equipment is likely to be removed or relocated as a result of a subsequent terminal modification. EPA therefore has included a provision for airport operators to request a waiver of compliance with this requirement for those instances where conflicts arise with terminal construction schedules. This waiver will be granted on a case-by-case basis at the discretion of the Administrator.

Also, EPA does not intend to require a civil airport operator to install ground power and preconditioned air in the absence of any commercial aircraft users that would otherwise utilize such service. The Agency understands that commercial aircraft currently operating at the only civil (commercial) airport in the Ventura control area do not use APUs or mobile ground power units. In this case, the electrical infrastructure requirements would not apply. Should commercial aircraft utilizing APU or mobile ground power wish to begin operations at that location in the future, however, the necessary infrastructure requirements will apply to the airport operator.

Some airlines typically operate their APUs even when ground power is available to minimize their turnaround time. To ensure that APU operation is minimized and ground power utilized, a provision to limit APU operation is applied to APU owners/operators (i.e., airlines). While an aircraft is parked, operation of its APU is limited to critical requirements (e.g., time needed for safe operation of the aircraft including system check-out, main engine start up, and system shutdown). This will apply whenever the aircraft is parked, whether at a gate or on the apron/tarmac for maintenance. APU operation is not to exceed 30 seconds upon arrival at the parking location (signified by the earliest of the following events: captain turning off seat belt sign, aircraft door being opened, parking brake being set, "IN" reported via ACARS (Aircraft Communications Addressing and Reporting Systems), or the aircraft coming to a complete stop

when no passengers are on board). APU operation also is not to exceed 5 minutes prior to departure from the parking location (signified by the latter of the following events: aircraft door being closed, parking brake released, "OUT" reported via ACARS, or the aircraft initiating movement when no passengers are on board). An exemption will be granted for essential maintenance of the APU and related systems. The Agency will consider eliminating this requirement if the objectives of the regulation can be achieved through alternative means.

While the aircraft is underway, the pilot-in-command retains full authority and discretion over APU use to ensure safe aircraft operation. This may require APU operation to relieve passenger discomfort while in an extended "hold" for departure due to unexpected delays if away from the gate. It is expected that this will occur only rarely.

APU use restrictions will be implemented on May 15, 1997 at all fixed gates at FIP area airports that currently have 400 Hz power and preconditioned air available. APU usage will be restricted at all other fixed gates as soon as 400 Hz power and preconditioned air are available, but not later than the first day of the applicable 1999 ozone season. APU use will be restricted at all other parking locations including open gates and maintenance parking areas as soon as 400 Hz power (and preconditioned air where required) are available but not later than the first day of the applicable 2002 ozone season. For the purposes of this rule, the following ozone seasons apply:

South Coast - March 1 through October 31;

Ventura - April 1 through October 31;

Sacramento - May 1 through October 31.

- Recordkeeping and Reporting

Owner/operators of GSE will be required to maintain and report annually information on GSE population by horsepower and fuel type. Commercial aircraft operators will be required to file annual reports on APU usage time for each flight during the ozone season.

- Compliance

Compliance will be assessed by comparing annual reports to the applicable requirements for a given year.

- Enforcement

A Notice of Violation (NOV) will be issued if an aircraft operator's annual report indicates noncompliance.

- Other Regulatory Elements

For specific provisions of the regulation, including recordkeeping and reporting, compliance, and enforcement, refer to the text of 40 CFR 52.2970.

(d) General Applicability.

(1) International Aviation. All of the regulatory measures described above will apply equally to foreign and domestic airlines engaged in international air commerce. Los Angeles International Airport (LAX) is the only FIP-area airport that currently has substantial activity by foreign airlines. The major domestic airlines typically operate their own GSE, while

the foreign carriers typically contract for the necessary services from a fixed based operator (FBO) located at the airport. EPA does not believe these differences will give either group a competitive advantage. Each airline, whether domestic or foreign, will be required to use equipment meeting identical regulatory requirements. Also, the control measure focuses on GSE owner/operators and is therefore consistent with comments received from foreign air carriers.

This rule will have limited effect on Part 135 (air taxi) operators due to their limited use of APU and GSE. For the same reason it will have little or no effect on activity in Ventura County and only a small impact on Sacramento.

(2) Airport Proprietors. Unlike the proposal, this interim final rule establishes certain regulatory requirements for airport proprietors (i.e., airport owners or operators). The proposed control program relied on target emission reductions that were required to be achieved by the commercial airline operators. In the proposal, EPA considered and rejected requiring the airport proprietor to implement the regulation. That scheme was rejected based on EPA's restricted regulatory authority as announced in Brown v. EPA, 521 F.2d 827 (9th Cir. 1975), vacated on other grounds, 431 U.S. 99 (1977). (There are limits on EPA's authority to mandate municipal entities to control the behavior of others by requiring specific control measures.)

The interim final rule contains three regulatory

requirements that apply directly to the airport proprietors in the FIP areas. First, the airport proprietor is required to covert all GSE if the airport proprietor is the owner/operator of the GSE. Second, the airport proprietor is required to provide aircraft ground power electricity and preconditioned air to all of the gates under the airport proprietor's control. Third, the proprietor must also ensure that adequate electric power is available within the airport boundary to enable other regulated parties (e.g., airlines with maintenance facilities at the airport) to comply with the regulations.

This is a direct regulatory requirement for the airport proprietor which is within EPA's regulatory authority. Such direct regulation of the municipal airport proprietor is not contrary to the holding of Brown v. EPA, supra, which only limited EPA's authority to mandate a municipal airport proprietor to control the behavior of others.

(e) State and Local Substitution. EPA believes that the State or local districts have legal authority to promulgate command and control regulations reducing emissions from GSE and APU usage (with the possible exception of certain GSE that may otherwise be preempted under EPA's national Title II rules). Therefore, EPA would be able to approve a SIP revision that incorporated most, if not all, of the provisions of this interim final rule. At the same time, EPA would be able to rescind any duplicative FIP provisions.

(f) Other Emission Mitigation Opportunities. This section

summarizes additional opportunities for reducing emissions from airport sources based on comments submitted to EPA. These measures are not specifically required as part of this regulation, and EPA is not taking credit in the FIP for resulting emissions reductions.

(1) FAA Air Traffic Control Improvements. The FAA, in its comments, committed to identify opportunities for reducing aircraft congestion while on the ground at the airport. Reductions in congestion will reduce taxi time, which is the largest source-mode of HC emissions. See the Technical Support Document for a discussion of the FAA's plans and achievements in this area.

(2) Commercial Airlines Operational Practices. As previously mentioned, the Air Transport Association and several individual airlines expressed their willingness to employ operational measures such as single/reduced engine taxiing and derated/reduced power takeoff to the fullest extent feasible, as long as their use remains at the discretion of the pilot-in-command. Several such practices already are in widespread use among the major airlines. EPA looks to the FAA to work with the commercial airlines to extend the use of these measures while maintaining the safety of the passengers and aircraft. See the Technical Support Document for a discussion of the FAA's plans in this area.

(3) Clean Fleet. American Airlines proposed that EPA, in cooperation with FAA, limit aircraft operations in the FIP areas

to the cleanest two-thirds of the aircraft in the fleet. This measure was described by EPA as one possible compliance option for airlines under the proposed bubble concept. The Agency believes the American Airlines proposal has potential based on the preliminary analyses conducted by EPA and American Airlines. However, due to the important and complex issues involved, this control measure is not being included in today's interim final rulemaking. EPA, in consultation with FAA, may further explore this control strategy in the future.

(3) Program Element - Military Airbase Operations.

(a) Summary of Proposal. EPA proposed to establish a declining emissions cap encompassing all mobile source emissions from military operations for each FIP area with certain exceptions. Specifically, the emissions from aircraft engines would be exempt from any reduction requirements because of national security concerns. The final rule would specify a schedule of percentage reductions from a 1990 emissions baseline. The actual baseline and corresponding absolute emissions cap (i.e., allowable tons) would be specified in a subsequent rulemaking. This two step approach was necessary because no comprehensive military mobile source inventory exists upon which to establish base year emissions and calculate the absolute emissions cap. (This same strategy was also proposed for other military installations and today's action on that proposal is described in Section III.D.5.d of this notice).

(b) Response to Comments.

(1) Comments. DOD provided the following comments. First, the exemption for aircraft must be maintained. Second, broad exemptions are also necessary for tactical vehicles and engines due in part to concerns regarding the technical feasibility and logistics of using alternative fuels. Third, base closures will dramatically reduce military emissions in the FIP areas. Fourth, the combined effect of exemptions and base closures will reduce emissions to such a low level that the mobile source bubble would provide only minimal benefits for the expenditure of significant resources. Fifth, the military is already doing several CAA related activities (e.g., I/M and clean fuel fleets), and other projects that will provide clean air benefits. Sixth, and finally, the budget does not allow more clean air related programs at this time.

Other commenters supported the military bubble concept. Among them was the Ventura County Air Pollution Control Agency.

(2) Response. EPA originally proposed the military mobile source bubble in order to bring the efforts required of the Federal government in line with efforts being required by corporate citizens in the FIP areas. The proposal included a declining cap on stationary source emissions for each of the FIP areas as well as fleet averaging requirements for civilian owners of heavy duty nonroad equipment, and EPA extended that concept to military operations, both stationary and mobile. In the final FIPs, the declining stationary source caps (except for the South Coast) and fleet averaging programs have been replaced by other

attainment strategies. Therefore, it is also appropriate to remove the requirement for military operations.

The important issue is whether the Federal government is meeting the same requirements which are imposed on its civilian counterparts, and whether it is employing whatever initiatives are available to minimize its contribution to local air pollution problems. The Department of Defense has submitted a plan for the FIP areas which documents that DOD is complying with all SIP and FIP requirements in the same manner as non-governmental entities (with some exceptions for uniquely military equipment used for combat or combat support purposes) and highlights the initiatives that DOD has underway that go beyond simple compliance. In addition the plan analyzes the effects of base closure, estimating overall a net environmental gain. This plan is available in the docket.

(4) Program Element - General Aviation.

(a) Summary of Proposal. The proposed FIP control strategy for general aviation was to impose operations fees on each takeoff in a FIP area to reduce the emissions from general aviation aircraft through activity reduction. No specific emissions cap or reduction target was specified. Data on aircraft population and activity was limited, and there were numerous owners/operators of general aviation aircraft, which would make tracking and enforcing a fixed level of emissions or activity extremely challenging. National emission standards for new general aviation aircraft engines were considered, but among

other concerns, the increasingly slow fleet turnover limits the benefits that can be gained through new equipment.

(b) Response to Comments.

(1) Comments. The industry, public, and other interested parties were asked to comment on the proposed regulation. The following significant comments were received:

Economic Impact and Need for Control. Imposition of an operations fee would devastate an industry that has been hard hit by numerous detrimental economic forces in the past several years including liability suits and economic recession. There has been a decline in activity and ownership statewide; since 1990 the operations (and consequently emissions) decline is significant. According to the Airline Owners and Pilots Association (AOPA), a national association that represents a large part of the general aviation community, there has been a 32 percent decline in flight hours since 1990 and a 15 percent decline in active based aircraft between 1990 and 1992 statewide. For Southern California, this decline was estimated to be closer to 25 percent. While these reductions are not necessarily permanent, they reflect the potential fragility of general aviation activity.

Educational Program. FAA, in its comments to the docket, indicated its willingness to promote educational programs to:

(1) minimize emissions from fuel transfer or spills and (2) improve fuel mixture management during idling to maximize efficiency and minimize emissions. They also indicated that

recapturing HC emissions from aircraft fuel tank vents is feasible and acceptable. The General Aviation Manufacturers Association (GAMA) made similar suggestions.

(2) Response. Direct regulation of the general aviation category is being dropped. While exemptions could have avoided some problems in implementation, enforcement still would be difficult and most likely labor intensive. Decline within this aviation segment makes it likely that emissions are being reduced without the need for regulations.

EPA notes with interest the Aircraft Owners and Pilots Association suggestions regarding opportunities for reducing emissions from general aviation sources. These measures are not specifically required as part of this regulation due to the need to further study the required technology, effectiveness, and safety of such programs (e.g., collecting liquid or evaporated fuel from aircraft tank vents.)

Nonetheless, EPA accepts FAA's offer to promote educational programs that may result in some emission reductions from general aviation activity. No credit will be taken in the FIP for reductions from this category. FAA's suggestions cover engine fuel enrichment during specific operating modes, minimizing emissions from fuel transfers and spills, and returning uncontaminated fuel to the main tanks after pre-flight testing. See the Technical Support Document for a discussion of the FAA's plans in this area.

(c) Final Rule - Key Regulatory Elements. There are no

regulations addressing general aviation.

(5) Program Element - Public Aviation.

(a) Summary of Proposal. In the proposed FIP, EPA requested comment on the manner in which public aviation emission sources should be included in the FIP control strategy. Such sources ranged from aircraft operated by Federal agencies such as the Coast Guard and the Forest Service to aircraft operated by local governments, for example police helicopters. EPA did not have sufficient inventory data concerning such aircraft operations to assess their contribution to the overall emissions inventory in the control area, although such emissions were judged to be limited relative to other aviation sources. The Agency noted that it may be desirable to exempt these types of aircraft operations from a specific FIP control program, given their importance to the local community and the limited emissions benefits that likely would result from their control. Comments were specifically requested on the desirability of such an exemption.

(b) Response to Comments.

(1) Comments. The proposed FIP requested comment on the form and need for regulation of public aircraft. In response, DOT recommended exempting Coast Guard aircraft from the requirements of the FIP due to their primary mission of responding to emergencies and general low level of activity.

(2) Response. The public aircraft category covers a range of aircraft types charged with a wide variety of public service

missions. Many of these aircraft have limited operations in the FIP areas, do not have APUs, and are not supported by GSE. EPA finds that the combination of important public service, likely limited emission benefits from any control scheme, and lack of comments to the contrary justify excluding public aviation from FIP rules. Although public aviation is excluded from mandatory controls, EPA is pleased to announce that the Coast Guard has committed to voluntarily reduce emissions from GSE at its air stations in the FIP areas: South Coast (Los Angeles International Airport) and Sacramento (McClellan Air Force Base). More specifically, the Coast Guard will electrify "non-essential" GSE (units such as motorized carts, sweepers, and other equipment that does not have to be available for emergency operations) by 1998. The Coast Guard will replace the remaining "essential" GSE with lower emitting units as follows: 2001 for GSE deployed domestically; and 2010 for GSE deployed world-wide. EPA applauds this voluntary commitment by the Coast Guard and asks that other public aviation operators evaluate their operations for similar clean air contributions.

(c) Final Rule - Key Regulatory Elements. There are no regulations addressing public aviation.

b. Locomotives and Locomotive Engines.

(1) Summary of Proposal. In the FIP proposal, EPA described control programs for locomotives and locomotive engines operating in the FIP areas because trains contribute a small but

significant portion of the inventory in Sacramento, Ventura and the South Coast. EPA proposed to achieve reductions from this sector through national standards for new locomotives, national or statewide standards for remanufactured locomotives and a fleet average program for the South Coast. EPA combined the national program and the FIP programs because of three factors of special concern: the interstate use of locomotives, the long total life of locomotives, and the relatively nonpolluting nature of locomotives as compared to trucks.

The first factor of special concern is the effect on interstate commerce (and on international commerce through the South Coast ports) absent a uniform national emission standard for locomotives and locomotive engines. Without a uniform national emission standard for locomotives, similar to the Federal Railroad Administration (FRA) regulations for the safe operation of locomotives nationally, the existing national system of rail transportation could either cease to exist or be severely disrupted. Development of a patchwork of state and local locomotive regulations across the nation would impose exceedingly difficult compliance problems for railroads that must cross multiple state lines.

The second factor requiring consideration is the very long total life of locomotives and locomotive engines and the usual multiple remanufacturings which occur during the total life of a locomotive engine. The long total life and multiple remanufacturings of a locomotive or locomotive engine necessitate

the inclusion of emission control requirements applicable to the remanufacture of locomotives and locomotive engines in order for any regulatory program to be effective. Without emission standards applicable to the remanufacturing of locomotives and locomotive engines, actual environmental benefits over the total life of a locomotive could be limited to the period preceding the first remanufacture and could therefore be as low as one-sixth or one-seventh of the value that would be expected from the numeric value of the emission standard. Additionally, without application to remanufactured locomotives, any standard would take an extremely long time to have any measurable effect..

The third factor requiring special consideration is the relative environmental effects of the modes competing for the transportation of freight and passengers. At present, the movement of freight by rail using the current unregulated (from the perspective of emissions) fleet of locomotives results in approximately one-third the NOx emissions that would result from movement of the same freight by the current fleet of trucks already subject to emissions regulations. Transportation of freight by rail is cleaner than transportation by truck, even though trucks are currently required to meet EPA emission standards while locomotives are not. The environmental advantage of moving freight by rail will continue even after the truck regulations finalized today are implemented in California and railroad emission reductions are achieved as a result of the

upcoming national locomotive rule⁴⁰. Any shift from rail transportation to truck transportation would increase the total system-wide emissions entering the atmosphere.

In the Sacramento and Ventura areas, a 40 percent reduction in NOx emissions from baseline levels is projected to be required from this sector. Emission reductions expected to be achieved in Sacramento and Ventura as a result of the upcoming national locomotive rule, and standards for remanufactured locomotives, would be on the order of 35 to 43 percent by 2005, and 38 to 46 percent by 2010. This for Ventura and Sacramento EPA proposed to rely on the national standards, together with standards for remanufactured locomotives, whether implemented nationally or limited to California.

The South Coast fleet average proposal also relied on the national new locomotive standards rulemaking. However, reductions required in NOx emissions in the South Coast by the attainment date of 2010 are substantially larger than the 38 to 46 percent that is expected from the national program. Further emission reductions would therefore be required in the South Coast due to its extreme nonattainment status. For the South Coast, EPA proposed a fleet averaging plan that would require an in-service NOx emission level of no greater than 5.5 g/bhp-hr by 2007 (approximately a 60% reduction) and 4.0 g/bhp-hr by 2010

⁴⁰ The national locomotive rule is planned to reduce NOx emissions from locomotives by 2/3, and regulations applicable to trucks in California are planned to reduce NOx emissions by approximately 3/5 from trucks, (from 5.0 g/bhp-hr to 2.0 g/bhp-hr.)

(approximately a 70% reduction).

For the South Coast, the averaging program proposed was designed to provide individual railroads with as much flexibility as possible to meet the emission standards most cost-effectively. To achieve this end, EPA proposed that railroads operating in the South Coast would be allowed to average their fleet NOx emissions such that the overall fleet did not exceed the proposed NOx levels described above, i.e., EPA proposed that companies could pool their operations for determination of the emissions average, thus providing additional flexibility for railroads operating in the South Coast. EPA proposed that the fleet average emission level be calculated from certification g/bhp-hr values and the fuel used by the railroads. EPA also suggested that miles travelled or hours of operation might be other appropriate measures to calculate fleet average emissions and requested comment on this issue.

EPA also proposed labelling requirements for locomotives operating in the South Coast. Under the proposal, any locomotive operated in the South Coast would have to be labelled by a permanent identifier attached to the locomotive and locomotive engine. Companies that operated locomotives in the South Coast would be required to maintain a roster of these locomotives for compliance purposes.

EPA reserved the right to emissions audit any locomotive found operating in the South Coast. Any railroad operating non-South Coast designated locomotives in the South Coast could face

finer as high as \$25,000 per day of operation. EPA also described a noncompliance fee for fleets that produce excess emissions. EPA proposed a noncompliance fee of \$10,000 per ton of emissions produced in excess of the fleet average standard.

Additionally, EPA proposed that any rail electrification in the South Coast be counted as producing zero emissions as long as the electrical powerplants used to produce the electricity were not located in the South Coast. If the powerplants used to produce the electricity were within the South Coast, powerplant emissions would have to be factored into the rail fleet average.

(2) Summary of Comments. EPA received a variety of comments on the locomotive portion of the proposed FIP. The commenters included the railroad industry, locomotive and locomotive engine manufacturers, customers of the rail industry, state and regional air pollution entities, and the U.S. Department of Transportation. The comments generally fell into the broad categories of general locomotive policy, standards for freshly manufactured and remanufactured locomotives, and the proposed South Coast fleet averaging program. A summary of comments received in each of these areas follows.

The general comments on locomotives tended to support policies that would encourage an increase in the movement of freight by rail. Since rail tends to be only about one-third as polluting⁴¹ as freight transportation by truck on a ton-mile of

⁴¹ The one-third value was calculated for NOx (Note; "Estimate of Relative Emissions Resulting from Movement of Freight by Truck and Train, 02/14/94, F. Peter Hutchins to Joanne I. Goldhand). Values

freight moved basis, most commenters urged EPA to adopt policies which would not negatively impact rail's ability to compete with other forms of transportation. Policies that encourage a shift of freight from rail to truck, they argued, will result in higher emissions overall. Additionally, some commenters suggested that the final FIP rule be structured to encourage a shift from truck to rail in California to take advantage of the lower polluting rates of rail compared to trucks. One commenter suggested that EPA regulate locomotives on a ton-mile basis rather than on a bhp-hr basis per locomotive. Finally, some commenters stated that the final FIP should allow some credit for both the expanded use of rail as well as any efficiency improvements that the railroad industry makes in the future.

Comments concerning the proposed standards for freshly manufactured and remanufactured locomotives were generally supportive. California Air Resources Board (CARB) and Natural Resources Defense Council (NRDC) recommended more stringent standards, with CARB stating that the proposed standards are lax compared to the on-highway and nonroad portions of the proposed FIP. CARB suggested that the reductions required in locomotive emissions should be in line with those proposed for other heavy-

were not calculated for HC, CO, PM or CO₂. Environmental advantages for HC, CO and CO₂ similar to those for NO_x can however be expected because the engines are similar and have similar emissions relative to fuel consumption and because fuel consumed to move equal amounts of freight equal distances is lower for rail than for truck.

duty engines to maintain intermodal competitiveness⁴². Support was unanimous for applying the remanufactured provisions nationally rather than only in California. Finally, some commenters stated that they could not effectively comment on the national standards for freshly manufactured and remanufactured locomotives because a notice of proposed rulemaking for the national locomotive standards had not yet been published. Some commenters questioned how an appropriate baseline emissions level can be determined without a defined test procedure in place. Thus, it was suggested that any final FIP action on locomotives be delayed until after the national locomotive rule is finalized.

The proposed South Coast fleet averaging program generated the most comments. In general, while commenters supported the accelerated introduction in the South Coast of locomotives which meet the Tier II level of the national standard, there was general opposition to a fleet average standard which is more stringent than the national standard. There were several reasons for this opposition. First, many commenters believe that a fleet average standard more stringent than the national standard will require different locomotives specifically for the South Coast area. Given that the new locomotive market is so small, it would be extremely expensive for locomotive manufacturers to develop and manufacture locomotives just for the South Coast, and such

⁴² Starting from present emissions levels of unregulated locomotives, reductions expected to be achieved in locomotive emissions (approximately 65%) are slightly greater than those expected to be achieved in truck emissions starting from present emission standard levels (approximately 60%).

development costs could hinder development of locomotives to comply with the national standard. Some commenters suggested that the research and development money for South Coast locomotives would be better spent on technologies which would benefit the entire nation.

Several commenters stated their belief that alternative fuel technology may be needed to meet the proposed South Coast fleet average. They questioned whether EPA should rely on technology that has unknown cost, reliability, energy efficiency, operating performance, safety and emissions. Additionally, the feasibility of the 4.0 g/bhp-hr fleet average standard in 2010 was questioned, even if alternative fuel technology were available. Other commenters stated their belief that the 4.0 g/bhp-hr standard could be achieved by diesel fueled locomotives and was an appropriate level for the national standard. These commenters did not provide technical support for their position. Finally, commenters believed that the South Coast fleet averaging program as proposed put the rail industry at a competitive disadvantage since it is more stringent and phased in much faster than the proposed provisions for ships, planes, and heavy-duty trucks.

In addition to the cost and feasibility issues discussed above, adverse comments were received concerning the operational changes which the railroads would have to undertake in order to comply with the South Coast specific fleet averaging program. According to these commenters, the railroads would have to concentrate the bulk of their new locomotive purchases in the

South Coast area, and would have to repower trains at the border of the affected area to assure that trains operating in the South Coast region were powered by the cleanest locomotives in a railroad's fleet. They would also be required to label locomotives designated as part of the South Coast fleet. Such operational changes, it was argued, would result in more locomotive idling, reduced operational efficiency and increased costs. These operational changes could have an adverse effect on the rail industry's competitive position and result in a shift of freight from rail to trucks.

Some commenters claimed that the proposed operational changes, along with the cost of new locomotives, would be especially burdensome for Amtrak. Amtrak purchases very few new locomotives, and does not control its funding for new purchases. Unlike the freight railroads, Amtrak also has no facilities near the borders of the South Coast area which could be used to repower trains entering and leaving the region. Additionally, Amtrak only accounts for an extremely small fraction of total rail traffic in the South Coast. For these reasons, the rail industry and the U.S. Department of Transportation recommended that EPA exempt Amtrak from the South Coast fleet averaging program. As an alternative, these commenters suggested that only intrastate Amtrak trains originating or ending in the South Coast be subject to the fleet averaging requirements.

EPA received several comments concerning the legal authority for the locomotive provisions in the proposed FIP. Most of these

comments concerned the issue of EPA preemption of State standards in the South Coast fleet averaging program. Section 213(a)(5) of the Act directs EPA to develop national locomotive standards which achieve the greatest emission reductions available. Additionally, section 209(e) of the Act prohibits any state or political subdivision from enforcing any standard or emission control requirement relating to new locomotives. Commenters argued that the South Coast fleet averaging program is preempted by section 209(e) because it is set at a level lower than the national standard, and is therefore, in effect, a local standard for new locomotives. Additionally, commenters questioned how EPA could set a fleet average standard which is more stringent than the standards set under section 213(a)(5), which are required to be set so as to achieve the greatest reductions in emissions achievable through the use of available technology, taking certain specific factors into consideration.

The railroad industry also argued that States have been preempted from regulating locomotive equipment since the adoption of the Locomotive Boiler Inspection Act of 1911, as amended, 45 U.S.C. §23. In a 1926 decision the Supreme Court held that the Federal preemption applies to "the design, the construction and the material of every part of the locomotive and tender and of all appurtenances." While the Clean Air Act Amendments of 1990 gave EPA explicit authority to regulate emissions from new locomotives and new locomotive engines, the commenters' view was that the 1990 Amendments did not affect this existing preemption

concerning State regulation of locomotive equipment.

The railroad industry commented that calculating the fleet average on the basis of fuel used is not appropriate and would not encourage more efficient locomotives or reduced idling time. The industry recommended that the fleet average be calculated instead on the basis of work done.

Several comments suggested changes in the procedures for determining compliance with the fleet averaging program. These suggested changes were intended to reduce the burden on the railroad industry. First, it was suggested that the fleet average be based on a statistically valid cross section of South Coast locomotives, so railroads would not have to keep track of each and every locomotive entering the South Coast. Second, to facilitate the cross section approach, it was suggested that an allowance be made in the fleet averaging program for the advance submission and approval of a compliance plan. Finally, it was recommended that the emission level for each locomotive for purposes of calculating the fleet average emissions be its certification level under the national rule governing freshly manufactured and remanufactured locomotives. It is likely that by 2007, when the first phase of the fleet averaging program was proposed to take effect, all locomotives operating in the South Coast will have been certified under the national rule.

The last category of comments received on the South Coast fleet averaging program concerned the proposed fees. Some commenters said that the noncompliance fee of \$10,000 per ton of

NOx emitted in excess of the requirements was not based on locomotive costs of compliance and should therefore be reconsidered. Commenters also stated that, under the proposed fee system if a railroad maintains a constant fleet average emission level but increases its traffic volume its fees would increase. They argued that if fees are a function of traffic growth, rail growth would be discouraged, resulting in a shift of freight from rail to truck.

Pursuant to EPA policy, CARB relied on projected emissions reductions from the upcoming national rule for its SIP.

(3) Final FIP Rule.

EPA today is finalizing the approach proposed in the FIP for emission reductions from locomotives for the Sacramento and Ventura areas; i.e. there will not be any special control measures applicable to locomotives operating in the Sacramento and Ventura areas. Emission reductions achieved through the national locomotive rule for new and remanufactured locomotives, in combination with normal fleet turnover, will provide the required reductions for these two areas.

For the national locomotive rule, EPA intends to propose a Tier I standard for locomotives first manufactured from 2000 through 2004 which will reduce NOx emissions by approximately 50 percent from present levels. For locomotives first manufactured in 2005 and later years, EPA intends to propose a Tier II 5.5 g/bhp-hr NOx emission standard, and to request comment on a more stringent standard. EPA also intends to propose that both Tier I

and Tier II locomotives, when remanufactured, comply with their applicable standards. The Tier II standard (5.5 g/bhp-hr) is expected to achieve at least a 65 percent reduction in locomotive emissions from 1990 levels when the fleet has completely turned over, by approximately 2040 to 2045.

The national standards combined with normal fleet turnover would provide a 42 to 48 percent reduction by 2010, falling short of the approximately 60 percent reduction in NOx emissions CARB's SIP projects will be required in the South Coast. Therefore, EPA has concluded that an additional measure is required for rail operations in the South Coast. The additional South Coast measure being promulgated today is a fleet emission limit/average emissions requirement which EPA believes is consistent with CARB's desires as described in the SIP. Because of the issues raised by commenters pertaining to passenger train operations some small differences between freight and passenger operations are incorporated into this additional measure for the South Coast.

The program finalized today has two compliance methods for railroads depending on their level of growth. EPA believes it is important to permit growth in railroad traffic, because the alternative will very often be growth in higher polluting transportation methods such as trucks. The basic program is a limit on total emissions for those railroads which experience no growth in traffic in the South Coast after 1990. This limit is equal to 50 percent of 1990 emissions in 2007 through 2009 and 40

percent of 1990 emissions in later years. Specifically, each freight and intrastate passenger railroad must show that the total emissions from its fleet in 2007 through 2009 is no more than 50% of the 1990 value, and in 2010 the total fleet emissions must be no more than 40% of the 1990 value. Each interstate passenger railroad must show that the total emissions from its fleet in 2012 through 2014 is no more than 50% of the 1990 value, and in 2015 the total fleet emissions must be no more than 40% of the 1990 value.⁴³

Because EPA is concerned that an absolute limit on locomotive emissions in the South Coast could actually result in an increase in overall emissions, a second compliance method is provided. For those railroads which do experience growth after 1990, the average emissions of their locomotives in the years 2007 through 2009 must equal the Tier I emission standard, and in 2010 and later years must equal the Tier II locomotive standard. A railroad may use this compliance method if it experiences an increase in total freight or passenger cars moved in the South Coast over its two year previous average of cars moved. Such railroads will be required to demonstrate that their fleet average emissions do not exceed national Tier I or Tier II

⁴³ The five year extension for compliance by interstate passenger train operators is made in recognition of Amtrak's unique financial situation, and its lack of facilities for repowering trains close to the borders of the South Coast (unlike the freight railroads). EPA believes that a five year extension will provide sufficient additional time for Amtrak to plan and implement purchases of the necessary locomotives. EPA will however review this finding and make any appropriate changes after the Tier II locomotives become available.

operating emission levels based on the methodology established in the national locomotive rule for calculating emissions from locomotives.

The South Coast fleet emission limit/average standard finalized today is intended to provide the railroads with maximum flexibility, and allow them to determine the most cost-effective way to meet the standard. Further, the standard is set at a level, and will be implemented in a manner, that does not prohibit growth in railroad operations. As discussed above, EPA is reluctant to prohibit such growth because of concerns that freight displaced from rail will be transported by trucks, which will result in greater total emissions in the South Coast than if the same freight was transported by locomotives. Railroads may choose to comply by purchasing locomotives or locomotive engines that meet the national Tier I or Tier II emission standards, which would allow them to carry more freight in the South Coast without fear of violating the standard. Alternatively, railroads may choose not to purchase such clean engines, but will be credited for operating less in the South Coast. Further, this approach encourages railroads to develop and implement efficiency improvements, such as rail lubrication, that result in reduced emissions.

Immediately after completion of the national locomotive rulemaking, EPA will begin an effort to determine the tons of emissions produced by each railroad in 1990, and the means of determining total emissions in the future. If South Coast

specific data is not available, EPA will consider nationwide data with support to show why it is applicable in the South Coast. This effort must wait until after the test procedure for the measurement of emissions is finalized in the national locomotive rule.

In the proposal, EPA included labeling and fee requirements for locomotives subject to the special emission standards proposed for the South Coast. Because the requirements finalized today are based on the requirements to be finalized in the national locomotive rulemaking, there will not be any South Coast-specific locomotives. Labeling and fee requirements will therefore not be necessary. However, railroads operating in the South Coast will be required to provide a roster of locomotives, by locomotive number, together with the certification emissions values for the families of locomotives operated in the South Coast.

Under either of the approaches finalized today, substantial reductions will be realized in NOx emission from railroad operations in the South Coast. It is expected that a 50 percent reduction will be achieved approximately three years before the attainment date and that an approximate 60 percent reduction will be achieved by the attainment date. Compliance with the fleet emission limits will result in a 60 percent reduction in locomotive NOx emissions from 1990 levels by 2010. Under the alternative compliance method for railroads experiencing growth in the South Coast, reductions in railroad emissions on the basis

of tons of freight moved, or passenger cars moved will be at least 60 percent from 1990 levels. Additionally, in the case of the South Coast as a whole, reductions can be expected to be greater since the growth in rail operations can be viewed as preventing potential increases in truck operations.

(4) Legal Authority. Several commenters challenged our authority to develop this program. They challenged it on two main grounds: that Section 110(c) of the Act, on which we relied, did not provide authority that was not provided elsewhere in the Act, and that EPA could not rely on State authority to develop the proposed regulation because the commerce clause of the U.S. Constitution would prevent the State from promulgating such a regulation. Some commenters stated that the appropriate authority on which to rely was Section 213(a)(5) of the Act.

In addition to the authority issues discussed below, EPA's approach is supported by the general agreement by all parties in the comments that the railroads' contribution to improved air quality in the South Coast should take the form of compliance with a fleet average standard requiring concentration of the newest locomotives in the South Coast. EPA believes that by working with the State and the railroads, the parties can craft an agreement for a program in the State Implementation Plan that will achieve the same reductions as this FIP measure. EPA's goal is to facilitate implementation of the State program prior to any implementation of this FIP program.

The Clean Air Act requires EPA to issue a national

locomotives rule by November 1995. Section 213(a)(5) of the Act grants authority to EPA to regulate new locomotives including authority to regulate certain remanufactured engines. The definition of new locomotive and the other elements of any Federal locomotive regulatory program will be further clarified in that rulemaking and need not be addressed for purposes of this rule. EPA believes that it is more appropriate to determine these issues in the context of that national rule than in the FIP.

As discussed in further detail in the summary and analysis of comments, the State would have authority to regulate interstate commerce provided it furthers a legitimate state interest and so long as it does not discriminate on its face between interstate and intrastate commerce, and "the incidental burden imposed on interstate commerce by the [state regulation in question] is not 'clearly excessive in relation to the putative local benefits.'" Minnesota v. Clover Leaf Creamery Co., 449 U.S. 456, 472 (1981) (quoting Pike v. Bruce Church Inc., 397 U.S. 137, 142 (1970)). If California could do such a rule, then EPA would also have authority "standing in the shoes" of the State. Courts have determined that controlling pollution is a legitimate state interest. Huron Portland Cement Co. v. Detroit, 362 U.S. 440, 442 (1960) (upholding a local anti-pollution ordinance that required ships to make structural changes in their boilers, and did not discriminate between inter- and intra-state commerce). California, with the South Coast's unique air quality problems

has a special concern in this area. Additionally, this rule clearly treats in-state and out-of-state railroads in the same manner. Finally, any burden is carefully tailored to meet the needed reductions: The South Coast program is designed to achieve the amount of reduction necessary in the South Coast, the program is geographically tailored to the area where reductions are most needed and it uses national locomotives. As described in more detail in the summary and analysis of comments, EPA believes that programs which do not meet these criteria fail the interstate commerce test.

Commenters also stated that California was preempted by Section 209 of the Act from regulating locomotives. The Clean Air Act preempts States from adopting standards relating to emissions from new locomotives and new locomotive engines. The exact nature of that preemption will be determined in the national rule discussed above but further consideration of this issue is given in the response to comments document.

Finally, in the absence of any other authority to promulgate this program, EPA has authority to implement this program under its residual FIP authority in Section 110(c) of the Act. The discussion of the authority granted EPA under Section 110(c) of the Act is in Section III.A.2. above. That Section outlines EPA's broad authority to cure planning inadequacies in any way not prohibited by other law. Clean air planning for the South Coast requires significant control of every source as described in Sections II.E. and III.B.5. of this preamble. Interested

commenters on both sides of the railroad issue acknowledged that more than just normal introduction of new clean railroad locomotives was necessary for the industry to do its part. Thus, if EPA lacks authority to promulgate the South Coast program under California or Section 213(a)(5) authority, which is not clear, as described above, EPA has authority under Section 110(c) of the Act to promulgate this program.

c. Marine Vessels and Ports.

(1) Background and Description of Proposal. EPA proposed a program for reducing emissions from ships and ports through economic incentives in the form of a port user fee and discount system⁴⁴. In the proposal, the user fee assessed against a particular vessel was proposed to be based on the NOx emissions for the vessel's engines, and the discounts based on the control strategies used to reduce emissions.

Discounts from the port user fee were proposed to be available for ship owner/operators who took actions to reduce the NOx impact of their vessels, including a one hundred percent discount (no fee) for ship owner/operators who met all three discount criteria. First, the fee could be reduced if emission control technologies or devices were installed and used. For technologies or devices that achieve 30 to 80 percent reduction in NOx emissions from today's diesel engines, the fee would be reduced by 50 percent. For technologies or devices that achieve 80 percent or greater reduction in NOx emissions, the fee would

⁴⁴ Section III.D.4.e.(4) of the proposed FIPs.

be reduced by 90 percent.

Second, the port user fee could be reduced if ships cold ironed (used shore-generated electricity) instead of using internally generated power while in port. EPA requested comments on whether the size of this fee reduction should be 7.38 percent (the size of in port NOx emissions relative to 1990 state-wide NOx levels from ships, as reported by SCAQMD) or 24.12 percent (the size of in port NOx emissions relative to 1990 South Coast NOx levels from ships, as reported by SCAQMD).

Third, the port user fee could be reduced by 50 percent (before the cold ironing discount was applied) if vessels traveled at least 70 miles from the coast when navigating in the area to the Northwest of the San Pedro Bay ports (the Port of Los Angeles and the Port of Long Beach, or the Ports), particularly while transitting the Ventura air basin. This distance was based on SCAQMD's recommendation.

The fee itself was proposed to be calculated using a modified version of the International Maritime Organization (IMO) NOx emission rate equation; a price of \$10,000 per ton of NOx; and the amount of time a ship's engines are used in each operating mode (hotelling, maneuvering, and cruising). EPA also proposed to allow testing to determine the emissions rate of any engine in order to permit a more accurate determination of the appropriate fee.

EPA estimated that this program would have reduced the contribution of NOx emissions from marine vessel engines to South

Coast air quality by 30 percent of 1990 levels. Of that 30 percent reduction, 15 percent would occur due to the use of low emitting engines by the 10 percent of the vessel population that accounts for half of the vessel calls at the Ports of Long Beach and Los Angeles. An additional 7.5 percent of the reduction would occur due to the use of low emitting engines by some of the other vessels that use the Ports less frequently. The remaining 7.5 percent of the reduction would result from cold ironing. All transiting ships were estimated to take the discount for avoiding Ventura and therefore this program was estimated to reduce Ventura ship emissions by approximately 75%.

(2) Comments on EPA's Proposed Program. EPA received many comments on various aspects of the proposed program⁴⁵. This section contains a brief description of those comments. While this section discusses comments in an issue by issue fashion, it is important to note that the comments on this rule were very cohesive. Parties interested in this rule joined together and developed an alternative emission reduction program, achieving the same reductions as the FIP proposal. EPA has tried to use these alternatives wherever possible and deeply appreciates the work that the ports, the shippers and their representatives did in developing and evaluating alternative control strategies.

Supporters of EPA's program included clean engine

⁴⁵Interested readers are referred to the Summary and Analysis of Comments for more information on those comments.

manufacturers, and staff of the International Maritime Organization and the Coast Guard. The clean engine manufacturers favored EPA's program because it supported the engine technologies being developed by them. The IMO staff supported the program because it complemented their efforts to reduce NOx emissions from marine vessels. Finally, the Coast Guard staff supported the program, with some reservations about the port user fee, because it would help ameliorate the conditions of several sensitive marine environments located in the area.

The proposal was opposed by marine vessel owner/operators, the Ports of Los Angeles and Long Beach, the European Commission and several of its constituent States, and the City of Los Angeles. Opponents of EPA's program focused on several elements, including the impact of the port user fee on port usage, the ability to reduce emissions using various emission technologies, the method of calculation of the port user fee, the ability of ships to cold iron, the estimated size of the marine vessel-related NOx inventory and the utility of requiring vessels to stay at least 70 miles from shore when navigating in waters Northwest of the Ports.

(i) Impact of User Fees on Port Usage. Several commenters argued that the proposed fee-based program would send discretionary cargo to other West Coast ports which did not charge emission fees, which would adversely affect both the San Pedro Bay ports and the local economy. These Port commenters claim that 40 percent of the cargo that passes through their

ports is discretionary, meaning that it is not produced or destined for use in the area and thus could easily be shipped into or out of the country through other ports. They argued that the proposed port user fee would raise the costs of doing business at the San Pedro Bay ports to such an extent that it would be economically beneficial for marine vessels to use other West Coast ports even if they do not have all the location and operational advantages associated with the South Coast ports. Loss of shipping would result in a loss of business for the San Pedro Bay ports, which in turn would result in loss of jobs and tax revenues for the area. These commenters reminded EPA that the Ports of Los Angeles and Long Beach are one of the few sectors of activity in the South Coast that have actually seen growth in the past few years, and continued growth should not be discouraged.

Based on a comparison of the San Pedro Bay Ports and other West Coast Ports⁴⁶, EPA believes that the impact of the user fees on the comparative advantage of the San Pedro Bay ports is uncertain. The impact of a fee could be mitigated if the port itself collected the fee and used the revenue to offset other port charges. As described in the FIP proposal the fee mechanism for encouraging control was developed because of the uncertainty of EPA's authority over international ships and international

⁴⁶"Comparative Analysis of West Coast Ports," prepared for United States Environmental Protection Agency by ICF Incorporated, dated September 30, 1994.

waters. The other possible option, requiring clean technologies as a prerequisite of using the ports was assumed to have a much more detrimental impact.

(ii) Technology Measures

Commenters noted that the negative impact of the fee was especially pronounced because the technology needed for the discount was unavailable on the great majority of all existing ships. EPA has been working with the international community, through the International Maritime Organization, to develop the most stringent feasible standards for NOx emissions from marine vessels. These standards would apply to marine vessels flagged in any country. This international effort is proceeding at this time, and it is anticipated that the standards, which are expected to require at least a 30 percent reduction in emissions, will go into effect for engines manufactured in 2000 and after. The IMO subcommittee working on this rule has determined not to require in use ships to meet the emission reduction. Thus the commenters state, EPA should not assume that in use ships could achieve an emission reduction through technological means as is proposed to be required for a discount.

On the other hand, these commenters acknowledge that a 7 percent reduction in NOx emissions from the use of low emitting engines and technologies will occur through the international standard. EPA's original proposal anticipated a 22.5 percent⁴⁷

⁴⁷15 percent from the use of engines meeting the IMO standards by regular port customers and 7 percent from the use of clean engines in other vessels.

reduction in NOx emissions from the accelerated use of low emitting engines and technologies in the San Pedro Ports.

The Ports' assumption that a 7 percent emission reduction will be achieved through the IMO standards is reasonable. This reduction will be achieved if approximately 23 percent of the vessel trips at the San Pedro Bay ports in 2010 are made by vessels that meet the IMO standards. Twenty-three percent of the ships would need to be equipped with engines 10 years or younger, since the IMO program is expected to be implemented in 1999. EPA believes it is reasonable to assume that this goal can be achieved through natural turnover. Approximately 10-20 percent of the ships in U.S.-flagged fleets are currently 10 years or younger. The container ships that are used on the trans-Pacific routes and have shown the greatest growth at the South Coast ports in recent years tend to be newer vessels.

(iii) Cold Ironing Issues. Some commenters noted that cold ironing will be problematic because most ships are not equipped to handle shore-generated electricity. In addition, many foreign ships require electricity with a frequency of 50 hz while California supplies electricity at 60 hz. This difference would require a ship to completely shut down electrically before the shore power can be energized or de-energized, which can be time consuming and dangerous.

EPA recognizes these concerns and does not seek to create a hazardous situation. However, EPA did not propose cold ironing

as a requirement for ships that use the San Pedro Bay ports. It would be up to a ship owner/operator to determine if it makes sense for a particular ship to cold iron.

Several commenters suggested that some reductions could be achieved by requiring tug boat operators to cold iron when their tugs were moored for long periods of time. As the tugs are generally based at the ports or other nearby ports, they are more often in the air quality district than most ships. EPA agrees that this reduction is achievable and should be required.

(iv) Inventory Issues. EPA also received comments from the Ports and marine vessel owner/operators that the inventories used by EPA and the CARB and the SCAQMD overstated the contribution of marine vessel emissions to the South Coast NOx inventory. No one commented on the inventories for Ventura. The Ports' inventory implies that a larger portion of NOx emission levels are due to cruising activity, and therefore that area NOx levels can be significantly reduced by moving cruising activity farther out to sea.

SCAQMD has tentatively revised its estimate of ship emissions to 24.3 tons NOx per day, 40 percent of which is attributable to cruising and 48 percent of which is attributable to hotelling. EPA is using these adjusted figures, to which ARB has also concurred in theory, for this final program. The SCAQMD has recently released a request for proposals for a contract to improve the emissions inventory from marine vessels and EPA is

helping to evaluate proposals.⁴⁸

(v) Other Reductions.

EPA received comments that there were some emissions reductions available from port operations which EPA had not considered in its proposal. First, the Ports proposed a 15-knot speed limit within 10 miles of the port entrance. Reducing engine load when an engine is at full power can be a very effective NOx emission control measure; but, unfortunately speed is a very imperfect indicator of power. Some ships may achieve a significant reduction in emissions while others may not achieve much at all due to this measure. The Ports estimate this proposal will reduce NOx emissions by 1 percent.

Second, the Ports asked EPA to acknowledge the many efforts already ongoing to make the Ports more friendly to the environment: the on-dock rail they have installed and the traffic mitigation measures which have reduced the amount of idling around the Ports, among others. For these reductions the Ports propose to take a 1 percent emission reduction.

EPA is concerned that achieving reductions through natural turnover and operational requirements such as speed reduction does not encourage ship owner/operators to do more to curb NOx emissions by using cleaner engine technology. Several technologies are currently available that reduce NOx emissions down to and below the proposed IMO NOx requirements. EPA

48 RFP #9495-27, "Marine Vessels Emissions Inventory and Control Strategies."

believes that it would be beneficial to include provisions in the final marine vessel NOx reduction program to encourage the use of those technologies now and in the future.

The Ports suggested that the speed reduction can be monitored through the Vessel Traffic Information Service (VTIS) run by the Marine Exchange. This system tracks ship movements in the vicinity of the San Pedro Bay ports, with the goal of ensuring that traffic moves safely and efficiently. The Marine Exchange has informed EPA that the VTIS can be modified to verify ship location and speed to the extent necessary to confirm the success level of the Ports' alternative program. In addition, they expressed willingness to support enforcement of this program by delivering the necessary information to EPA or the appropriate California enforcement organization in a timely manner⁴⁹.

While the VTIS will help solve the technical aspects of assuring reductions from the Ports' program, this effort is still complicated by the fact that there is a complex network of international laws on coastal waters that imposes certain jurisdictional limits on any State's authority. Even if it is possible to physically ascertain whether a ship is operating in a certain way, it may be problematic to dictate a ship's movement beyond a certain distance from shore. From a legal perspective, providing incentives for reducing emissions is a more viable

⁴⁹ Letter from Captain Manfred H.K. Aschemeyer, Executive Director [for the Board of Directors] of the Marine Exchange of Los Angeles-Long Beach Harbor, Inc. to Joanne Goldhand dated December 8, 1994, Re Monitoring Vessel Traffic in Southern California.

approach.

(vi) Distance from shore requirements. Comments on the proposed ships and ports measures from the Los Angeles and Long Beach Harbor Departments, the shipping industry and other interested parties, indicated that re-routing ships 70 miles or further from the shore of California would significantly increase the cost and reduce the use of Los Angeles and Long Beach harbors. The Ports have been an important element in the economic growth of Southern California and Pacific Rim trade will continue to be an important sector of the area's economy.

On the other hand, the Navy has commented that moving ships out of the Santa Barbara channel would restrict use of the Point Mugu Sea Range, degrading readiness and development of weaponry, thereby jeopardizing national security interests. The Sea Range is a unique and critical national security asset. While approximately 1200 large tankers travel through the area south of the Channel Islands and through the test range, they do so only when permitted by the Navy when such use does not interfere with range operations. The Navy objects to any measures which would diminish the Navy's ability to use this asset whenever required.

Accommodating these concerns with the need to protect shipping safety and meet the health-based standards of the Clean Air Act is a challenging task. While there are substantial data available indicating that emissions from ships, particularly NOx emissions, affect air quality in Ventura and the South Coast, additional, more detailed, data are needed regarding the most

effective means of reducing emissions from this sector.

Given the importance of both shipping and the test range, EPA is deferring a determination of the detailed measures necessary to reduce emissions from shipping that affect Ventura and South Coast air quality attainment, pending the collection of additional data. Further information about ship engine emissions and control, ship scheduling and routing, including the present procedures for control by the Navy of use of the Point Mugu Sea Range for select vessels at times when the range is not in use by the Navy and the distribution of emissions across the vessel population, may help in determining the nature and extent of needed control measures. In addition, EPA may benefit from ongoing Coast Guard evaluations of other safety concerns with respect to Pacific coast shipping. The goal of using data from these studies is to determine the most cost effective and least disruptive way to reduce shipping emissions of NOx in the South Coast by 30 percent and limit NOx emissions from shipping in Ventura to no more than four tons per day.

EPA, CARB, local air districts, and others are planning a 1996-1997 study of the formation of ozone in the southern portion of California. The scope of the study will be determined by the availability of funding, but may include a larger domain than is currently available for the Ventura Basin. The study may be able to better characterize the transport of pollutants in Southern California. Information from the study may be useful in assessing the impact of shipping vessels on ozone concentrations

in Ventura and Los Angeles. Any pertinent information derived from the new study will be incorporated into the analysis of the effects of shipping emissions. In particular, the EPA and CARB in its State Implementation Plan may modify this four ton per day requirement based upon a finding of this study that a different emissions limit will be sufficient to attain the health-based ozone standard in Ventura County by the CAA deadline.

Further, EPA will convene a process to share shipping test data, to assess current and alternative vessel routing patterns, including any current vessel travel through the sea range, and to evaluate any new modeling or meteorological data. EPA, in consultation with the Navy and the Coast Guard, the California Air Resources Board, the Ventura County Air Quality Management District, the South Coast Air Quality Management District, and affected industries, will make determinations of control strategies based on this new information by August 22, 1997 and publish the results immediately thereafter. A proposal will be completed within six months of that determination and a final rule will be completed within one year after that proposal.

EPA is not prejudging the results of this work. The effective date of the control measures and monitoring of voluntary compliance will not begin until at least June 1, 2001. It is important to arrive at control strategies as quickly as possible with the benefit of additional information and with the input of all interested parties.

The regulation of ships and ports is substantially different

from the regulation of any source that California or EPA has yet undertaken. First, the regulated source is intrinsically international. Not only are 84 percent of the ships which visit the Ports non-U.S. flagged, but also the trade they conduct is international. Second, the regulated activity occurs in an area subject to a complex web of international and maritime jurisdictional limitations. Inappropriate regulation in this area could have negative repercussions in the international sphere. Third, the Coast Guard is in the process of reevaluating ship access routes in connection with its studies concerning the Monterrey Bay Sanctuary and tanker safety.

(3) Description of Final Program

(i) Overall Description of Final Program

The regulatory approach for ships and ports finalized today consists of two strategies. The first is revision of specific measures suggested by the Ports and other commenters. EPA is finalizing a cold ironing requirement for tug boats and a recommended speed reduction strategy. EPA is also crediting the reductions to be achieved by the international NOx standard being developed and the infrastructure improvements made at the Ports. The second strategy is a commitment to study the possible further measures necessary to limit NOx emissions from shipping in Ventura to no more than four tons per day and to reduce NOx emissions from shipping in the South Coast by 30 percent.

(ii) Speed Reduction

EPA is recommending that all marine vessels that call on the

Port of Los Angeles and/or the Port of Long Beach should reduce their speed to 15 knots when cruising within 10 miles of the entrance to the Ports, regardless of the direction they are going. Much of this operation occurs in international waters and therefore is not enforceable by traditional means. EPA is finalizing a means of determining whether ships are adopting a reduced speed and will notify any owners of ships which do not follow the recommended speed. As described above, EPA will investigate mechanisms to enforce or encourage emissions reductions from this source over the next several years. Any mechanism developed to achieve the remaining reduction requirements will also be applied to the speed reduction.

In order to encourage use of clean ships, this operational measure will not apply to those ships that are equipped with engines that meet or exceed IMO standards for NOx emissions (30 percent or greater reduction in NOx emissions). EPA believes this relaxation of the operational measure is justified, since these vessels have low emissions and encouraging their use is as important as reducing the impact of emissions from other engines.

To ascertain the level of implementation, EPA is relying on the assurances of the Marine Exchange that they can develop an appropriate monitoring plan. In the final rule, EPA is requiring the development of such a monitoring plan. The monitoring plan, which must be approved by EPA, must at least be able to identify ships as they are approaching or leaving the Ports and verify that they are operating in the areas and at the speeds described

in this program and any forthcoming Coast Guard actions. EPA anticipates that this monitoring system will be an expansion of the VTIS currently operated at the Ports of Long Beach and Los Angeles by the Marine Exchange.

The information obtained by the VTIS will be used to determine the extent to which marine vessel owner/operators are implementing the operational changes. Specifically, by the 15th day of each month, EPA should receive a report showing the percentage of ships that did not adopt the operational changes during the preceding 6 calendar months. For the purpose of determining the percentage of marine vessels not adopting the recommended speed, port entries and exits will be counted as separate trips. However, only those nonexempt vessels navigating in the relevant areas will be counted. Trips by vessels that are not subject to the operational recommendations will not be counted. Exempted vessels include certain government vessels as described below, and low emitting vessels as described above.

(iii) Operational Requirements for Tugs

Each tug that operates within the Ports must cold iron if it is anticipated that it will be moored at its home base for 4 or more hours. A tug that is away from its home base but is anticipated to be moored for 4 or more hours must shut off all engines while moored. To comply with this requirement, tug captains will be required to evaluate how long the tug is going to be moored between jobs, and then cold iron or shut down if that time is anticipated to exceed 4 hours.

To enforce this program, EPA will require operators of each tug that operates within the Ports to file sworn affidavits that contain a description of their operational patterns over the past six months. In that affidavit, the tug captain will be required to attest that he or she followed the cold ironing or shut down requirement. These affidavits will be combined with a spot check program, to ensure that tug captains are complying.

(iv) Credits for Other Programs

EPA has proposed, under court order, regulations regarding the emissions of marine diesel cycle engines. These rules are required to be completed by November 30, 1995. EPA is crediting the 37 percent NOx emission reduction these rules were proposed to achieve. While the IMO standard is less certain, EPA believes it is appropriate to credit this standard as well since the process of developing it is substantially far along and because the IMO, but not the United States, can enforce rules against foreign flag vessels.

EPA has also granted a 1 percent credit toward the 30 percent required reduction in marine vessel NOx emissions for port infrastructure improvements. While this is most likely only a small portion of the NOx emission reductions that are anticipated to result from those improvements, it is very difficult to ascertain their actual benefits. Also, some of the improvements have already been implemented and/or constructed, resulting in early NOx emission reductions.

(v) Further Commitments

Although the measures described above will result in reductions in emissions in the South Coast, they will not result in the full 30 percent proposed from this source. Further, they will only result in very small benefits in Ventura where ships are projected to constitute approximately 20 percent of the NOx inventory in the attainment year of 2005. Unfortunately, due to the unique circumstances described above, developing further emission controls for ships at this time is difficult without risking either harm to South Coast shipping or to the Point Mugu Sea Range. EPA is therefore issuing specific and detailed commitments to a future study and rulemaking to develop the necessary further control.

(vi) Government Vessels

EPA originally proposed to exempt the Department of Defense from the marine vessel/ports program, and is finalizing that exemption. On the other hand, EPA did not provide an exemption for Coast Guard vessels in the original proposal. However, EPA recognizes that it is unwise to keep vessels which are used for emergency search and rescue or other safety-related operations from operating at any safe speed. Therefore, marine vessels used by the Coast Guard for emergency search and rescue or other safety-related operations will be exempt from this program. However both the Navy and the Coast Guard have agreed with the EPA that whenever practicable their ships will operate consistent with the operational requirements of this marine vessel/ports program.

d. Non-Aircraft Military Installations. EPA proposed to apply the specific requirements for military air bases to non-aircraft military installations also. However, in today's final rule, EPA is promulgating no unique regulations for military air bases (see section III.D.5.a.); therefore, no unique regulations apply to non-aircraft military installations. The requirements for military vessels, which are not covered by this section, are discussed in section III.D.5.c.

E. Fuels. In the proposed FIPs, EPA proposed that California's fuel programs should remain in place. EPA discussed the possibility of proposing more stringent gasoline and diesel fuel quality regulations to further reduce VOC and NOx emissions relative to fuels meeting California's current reformulated gasoline and diesel fuel specifications. However, EPA decided at that time not to propose any additional restrictions given our projection that fuels meeting California's specifications would produce lower VOC and NOx emissions than fuels meeting EPA's current reformulated gasoline and diesel fuel specifications.

EPA received no substantive comment on either the cost or benefit of additional fuel quality improvements beyond those already established by California and little comment on California's existing program. EPA's own analysis of additional controls (e.g., lower gasoline RVP and sulfur content, lower diesel fuel aromatic content) indicates that such changes would be more costly and produce only marginal emission reductions relative to other programs being promulgated today. Thus, EPA is

not promulgating any additional commercial fuel regulations at this time.

EPA received many comments noting that one year after the effective date of the change in Sacramento's ozone classification, Federal reformulated gasoline would be required under Section 211(k) of the Act. California reformulated gasoline, which will exceed the Federal reformulated gasoline requirements, is already required in Sacramento beginning June 1, 1996. Thus, if the effective date of the ozone classification change were prior to June 1, 1995, Federal reformulated gasoline would be required to be sold in Sacramento in the interstitial period before the California program begins. These commenters were very concerned that the rapid shift in fuels would be costly and disruptive without a significant or long term benefit for air quality. As described above, EPA is granting the State's request to change Sacramento's ozone classification to "Severe," however, this change will not be effective until at least June 1, 1995 (see FR notice regarding this topic) thus only California reformulated gasoline will be required in Sacramento in 1996.

EPA has received CARB's reformulated gasoline and reformulated diesel fuel regulations as part of their November SIP submittal. As discussed in Section II.B.2. of this notice, EPA is approving the Reformulated Gasoline and Reformulated Diesel Fuel provisions as part of California's SIP.

F. *Section 182(e)(5) New-Technology Measures for the South Coast*

1. Introduction.

The final FIP greatly reduces EPA's section 182(e) (5) commitments. This is the result of two significant changes from the FIP proposal. First, changes to the South Coast VOC and NOx carrying capacities and adjustments to the emissions inventories have substantially decreased the amount of reductions needed for ozone attainment. Second, EPA's SIP approval of the new-technology measures adopted and submitted by CARB and SCAQMD allows the replacement of the Federal measures with State and local section 182(e) (5) measures.

The combined effect of these two developments reduces the dimensions of the FIP's new-technology measures from 603 tpd VOC and 221 tpd NOx in the proposal, to 257 tpd VOC and 47 tpd NOx in the final. This equates to revised FIP 182(e) (5) reductions of approximately 17 percent for VOC and 3 percent for NOx from the total 1990 baseline inventory.

The proposed FIP included separate new-technology measures for 5 different categories: (1) stationary and area source VOC cap categories, equal to or greater than 4 tpy; (2) stationary and area source NOx categories, equal to or greater than 4 tpy; (3) consumer products, aerosol paints, architectural coatings, and pesticides; (4) remaining stationary and area sources of VOC and NOx (not covered under 1-3 above); and (5) mobile sources of VOC and NOx.

2. Public comments.

Comments from environmental groups objected to EPA's

proposed new technologies measures for a variety of reasons. The objections are summarized below, followed by EPA's response.

(A) *The FIP uses section 182(e)(5) as a large loop-hole to enable the region to avoid aggressive commitments to available, but politically difficult control measures.* EPA does not agree that there are other measures that are practically available to the Federal government at this time. This does not mean, however, that additional measures cannot, or should not, be adopted in the near future. The SCAQMD has included in its 1994 AQMP a long and challenging list of short-term and intermediate-term measures for development and adoption through 1997. EPA intends to devote the Agency's available resources to activities supporting the SCAQMD rule development initiatives rather than creating a parallel and competing process at the Federal level. Unless the SCAQMD defaults on its rule development program, EPA will continue to prefer to support the local rulemaking process in lieu of attempting to usurp the SCAQMD's function.

(B) *The FIP fails to demonstrate that the new-technology measures cannot be implemented in the near term.* The commenters recommend that EPA adopt at this time technology-forcing standards and aggressive fleet rules. EPA agrees that there are unlimited theoretical options for forcing technology. EPA believes that it will be easier to choose from among air quality options in the future, as the most promising technologies and associated infrastructures emerge. If EPA were to replace new-technology measures with Federal regulations at this time,

unnecessarily harsh consequences would likely result. The SCAQMD and CARB are in a superior position to evaluate and pursue aggressively the development of additional near-term regulations that can speed progress while minimizing dislocations to the State and regional economies.

(C) *The FIP fails to include a schedule for the development and application of the new-technology measures.* The FIP new-technology measure schedule, in fact, does include dates for proposal, promulgation, and implementation for the control categories (see 40 CFR 52.2951). In the future, EPA expects to provide further information and public involvement opportunities relating to the development of new-technology measures. On a continuing basis, EPA also solicits information from the public on issues relating to the availability of the vast range of potential technologies and control techniques for achieving the reduction targets specified in the FIP.

(D) *The FIP does not contemplate or enforceably require any action to foster continued development of technology or infrastructure.* CARB, SCAQMD, and EPA all have committed to undertake the diverse activities that would culminate in achievement of the new-technology emission reductions on schedule, but EPA does not conclude that the Act mandates that the FIP or SIP include specific enforceable actions to foster development of new-technology measures and infrastructure.

(E) *The FIP fails to identify implementing entities and commitments from them.* EPA is the implementing agency for

issuance of the enforceable regulations relating to the new-technology measures. The commenters indicate that the FIP must in addition require public and/or private sector commitment to a timely research and commercialization program for the new technologies envisioned in the FIP. In association with other involved Federal, State, and local agencies and private industry, EPA intends to play a leadership role and devote its available resources to facilitate the development and application of new clean technologies. EPA does not believe that it is appropriate or necessary at this time to require such cooperation, especially given the ambitious clean technology development programs sponsored by the State of California, various Federal agencies, and the SCAQMD.

(F) EPA fails to show that all other reasonably available options have been exhausted. The commenters mistakenly identify this as a requirement specified in EPA's General Preamble. EPA believes that this final FIP includes, at the time of issuance, the reasonable control options available for implementation at the Federal level. As discussed above, the 1994 South Coast ozone plan includes other control measures scheduled for near term adoption. If these measures are not adopted as scheduled, EPA will consider Federal adoption of comparable measures in the FIP.

(G) The FIP fails to substantiate the arbitrary emission reductions assigned to the new-technology measures. The emission reductions targeted for the new-technology measures cannot be

based on a fine discrimination of comparative costs and feasibility until the expected technologies are developed further. EPA fully intends to survey on a continuing basis the relative feasibility of control for different source categories in order to speed progress and to ensure, to the greatest extent practicable, equity among the various categories. If the anticipated technological advances do not occur, the Act requires implementation of contingency measures to make up for emission reduction shortfalls. CARB, SCAQMD, and EPA have all met the Act's requirement to commit to the development and adoption of these contingency measures no later than 3 years before implementation of the new-technology measures.

(H) *The FIP fails to identify and commit funding for the long-term measures.* The EPA intends to pursue available Federal funding for development of clean technologies. EPA also intends to provide support and assistance to State and SCAQMD efforts to identify clean technologies and advance the commercial application of the technologies.

(I) *The FIP cannot use the section 182(e)(5) provisions because EPA failed to demonstrate that the emissions reduction milestones through the year 2000 will be met.* This issue is addressed in a technical support document to the proposal. See also the discussion in Section II.E.

(J) *The FIP cannot use the section 182(e)(5) provisions because EPA failed to provide enforceable commitments to develop and adopt contingency measures.* EPA has provided commitments in

enforceable regulatory form. See 40 CFR 52.2951(f). EPA does not believe that the Act requires that the contingency measures be specified as to form and content until they are required to be submitted in regulatory form, three years before the first emissions reduction is scheduled from section 182(e)(5) measures.

3. Final rules.

To achieve the residual reductions now needed for attainment after approval of the CARB and SCAQMD new-technology measures and final promulgation of the FIP's complete regulations, EPA must adjust not only the reduction requirements but also the distribution of reduction responsibilities. This is necessary to ensure that the FIP's measures are in harmony with the specific CARB and SCAQMD new-technology measures.

In order to avoid duplication with the State and local measures, EPA in this final action is eliminating the separate stationary and area source categories in the proposed FIP, applicable to VOC cap sources (40 CFR 52.2951(b)), NOx cap sources (40 CFR 52.2951(d)), and consumer products, aerosol paints, architectural coatings, and pesticides (40 CFR 52.2951(f)).

In the final FIP, only a single stationary and area source category remains (40 CFR 52.2951(b)). For this category, EPA has set a schedule for achieving reductions from the 1990 stationary and area source baseline emissions for all stationary and area sources of approximately 33 percent for VOC and 3 percent for NOx in 2007 (see 40 CFR 52.2951(c)). The FIP 182(e)(5) stationary

and area source measure is scheduled for implementation on January 1, 2007, and it is expected to achieve reductions of 218 tpd of VOC and 7 tpd of NOx. As technologies emerge, EPA expects to establish reduction requirements and appropriate reduction schedules specific to individual source categories at least adequate to achieve the cumulative reductions by the specified date.

The mobile source new-technology measure (which is now 40 CFR 52.2951(d) and (e)) has been adjusted to change the reductions to match the new attainment targets. The rule now provides for reductions of approximately 5 percent for VOC and 3 percent for NOx from the 1990 mobile source baseline emissions. This rule is scheduled for implementation on January 1, 2006, and it will achieve a 39 tpd VOC reduction and a 39 tpd NOx reduction. As with the stationary and area source new-technology measures, EPA anticipates rulemaking in the future to set category specific reduction requirements for mobile sources based on the pace of new-technology development and commercialization.

G. Attainment Demonstrations.

1. Introduction. The draft attainment demonstration included in the proposed FIP is described at 59 FR 23392 (May 5, 1994). EPA has significantly modified this demonstration to reflect updated inventory and modeling information from the 1994 SIP as well as considerable changes to the FIP control strategies.

2. Changes to Baseline Inventories.

a. Base-year emissions inventories. In its November 15, 1994 SIP submittal, CARB provided 1990 base-year annual and peak season emissions inventories for ozone precursors for each of the FIP areas. For purposes of this notice, EPA relied heavily on these inventories and on additional emissions information prepared by local air pollution control agencies. These SIP inventories are also briefly described in sections II.C., II.D., and II.E. of this notice.

b. Projected emission inventories. The 1990 base-year emission inventory estimates are projected to change in future years as a result of growth, adopted regulations, and other factors. CARB and the districts projected emissions for each emission category to the targeted attainment year (e.g., 2010 for South Coast) based on category specific emission factors. These factors include, for example, housing starts, employment, population, gasoline sales, and sales tax revenues.

c. Stationary Sources. For stationary source categories, a size cutpoint differentiates point and area sources. EPA guidance on emission inventories sets this cutpoint at 10 tpy for VOC sources, and 100 tpy for NO_x and CO.⁵⁰ Point source emissions are calculated by adding estimates of individual source facilities in a category. Area source emissions are generally determined by subtracting point sources from a total estimate

⁵⁰See Guidance for Initiating Ozone/CO SIP emission Inventories Pursuant to the 1990 Clean Air Act Amendments (OAQPS, February 13, 1991), page 22. These cutpoints are different from the definition of major stationary source used for the New Source Review or RACT regulations.

derived from an emission factor assumed for the entire category. Certain source categories are estimated by the State while others are estimated by local districts.

(1) Sacramento. The FIP's 1990 base year and attainment year stationary source NOx and VOC emission estimates rely on the inventories described in the Sacramento Area Regional Ozone Attainment Plan submitted to EPA on December 29, 1994. As discussed in section II.C., the final FIP inventory reflects the most up-to-date inventory available and is consistent with the submitted SIP.

The table titled, "Sacramento Stationary Source 2005 Inventory Summary" is a summary of the major categories and emissions in the 2005 stationary source inventory which are described further in the technical support document in the docket. This is the same inventory discussed in section II.C. and represents the stationary source attainment year baseline from which the FIP attainment demonstration will be determined. Emissions reduction from FIP measures have not been accounted for in this summary.

Sacramento Stationary Source 2005 Inventory Summary

(tons per summer day)

	2005 VOC	2005 NOx

Solvents/Coatings	62.3	
Petroleum	9.8	
Industrial Process	4.8	
Pesticides	11.3	
Livestock Waste	8.0	
Ag Burning	3.6	
Landfills	1.6	
Bakeries	1.7	
Other	3.5	15
Total Stationary	106	15

(2) Ventura. The base-year and attainment year stationary source emission estimates used in the FIP rely heavily on the inventories described in Ventura's 1994 AQMP submitted to EPA with CARB's SIP on November 15, 1994. As discussed in section II.D., the final FIP inventory reflects the most up-to-date inventory available and is consistent with the submitted SIP.

The table titled, "Ventura Stationary Source 2005 Inventory Summary" represents a summary of the major categories and emissions in the 2005 stationary source inventory which are described further in the technical support to this notice. This inventory represents the stationary source attainment year baseline from which the FIP attainment demonstration will be determined. It generally does not incorporate credit for FIP measures or for SIP measures planned or adopted since 1991.

Ventura Stationary Source 2005 Inventory Summary⁵¹

51 "Ventura County 1994 Air Quality Management Plan," Ventura County Air Pollution Control District, November 8, 1994, Tables 9-3 and 9-4, Alternative 2, uncontrolled columns.

(tons per summer day)

Stationary Sources	VOC 2005	NOx 2005
Fuel Combustion		
Oil & Gas Production & Refining	0.6	2.4
Other Manufacturing/Industrial	0.3	5.5
Electric Utilities	0.5	6.7
Other Services/Commerce	0.3	3.4
Residential	0.1	1.0
Solvent Use		
Architectural Coatings	6.4	---
Other Surface Coating	6.7	---
Consumer Products	7.4	---
Other Solvent Use	6.5	---
Petroleum Process, Storage & Transfer	4.8	---
Pesticides	12.9	---
Other	1.4	0.1
Outer Continental Shelf Platforms	0.7	0.2
TOTALS	48.6	19.3

(3) South Coast. The FIP's 1990 base year and

attainment year stationary source NOx and VOC emission estimates are based on the inventories described in South Coast AQMD's 1994 AQMP and CARB SIP, which was submitted to EPA on November 15, 1994. As discussed in section II.E., the final FIP inventory reflects the most up-to-date inventory available and is largely consistent with the submitted SIP.

The table titled, "Summary of Projected South Coast VOC and NOx Stationary Source Attainment Year Inventory" represents a summary of the major categories and emissions in the 2010 stationary source inventory which are described further in the technical support document. This inventory represents the stationary source attainment year baseline from which the FIP attainment demonstration will be determined. Credits for adopted SIP measures are included in the table,⁵² but credits for FIP measures are not.

Summary of Projected South Coast VOC and NOx Stationary Source Attainment Year Inventory (tons per summer day).

Stationary Sources	VOC 2010	NOx 2010
Fuel Combustion		

⁵² As discussed in III.C.4.(a)(4) of this notice, EPA has proposed a conditional approval of the NOx RECLAIM program. As a result, EPA is finalizing a NOx cap measure in the interim until the NOx RECLAIM program can be fully approved. The NOx cap measure is intended to demonstrate equivalent reductions compared to the NOx RECLAIM program.

Oil & Gas Production	1.4	0.2
Petroleum Refining	2.2	1.9
Other Manufacturing/Industrial	6.5	19.8
Electric Utilities	0.4	0.3
Other Services/Commerce	7.8	14.9
Residential	1.0	25.5
Solvent Use		
Dry Cleaning	15.2	0.1
Degreasing	69.5	0.1
Architectural Coatings	83.0	--
Other Surface Coating	166.3	0.6
Asphalt Paving	3.4	--
Printing	14.1	0.1
Consumer Products	109.2	--
Other	20.8	--
Petroleum Process, Storage & Transfer		
Oil and Gas Extraction	17.6	0.2
Petroleum Refining	23.8	1.7
Petroleum Marketing	57.8	0.1

Other	4.1	0.1
Industrial Processes		
Chemical	11.4	0.5
Food and Agricultural	25.6	0.1
Metal Processes	0.9	0.9
Other	11.9	0.1
Miscellaneous Processes		
Pesticides	7.1	--
Farming Operations/Livestock Waste	33.9	--
Waste Disposal	6.2	--
Other	10.3	3.2
Waste Burning	2.0	2.0
RECLAIM Sources	--	28.2
Emission Reduction Credits	10.8	2.3
Totals	727	106

d. Mobile sources.

(1) Highway vehicle emissions. For the most part the highway inventories and control measure benefits for the FIP were determined with CARB's EMFAC7F/BURDEN7F models for consistency with SIP and transportation planning inventories. Thus, the

vehicle miles traveled (VMT) assumptions are those that are inherent in BURDEN7F rather than the more recent VMT estimates used in the FIP proposal or even more updated estimates that are expected to be incorporated into BURDEN7G. The only adjustment to these BURDEN numbers in the SIP and the FIP was to use a simple growth rate of 2.0% per year for heavy duty diesel vehicles in Sacramento.

The main reason EPA had not used EMFAC for the FIP proposal was the inability of EMFAC to model some of the control measures that had been considered for the FIP. Since that time, CARB has made the necessary modifications to EMFAC to allow modeling the 1998 national 4.0 g/bhp-hr NOx heavy duty vehicle standard and the stringent FIP enhanced inspection/maintenance program.

The base year 1990 inventories as well as the attainment year baseline inventories were provided by CARB and are the same inventories used for the SIP adopted November 15, 1994. These baseline values include the effects of California's current test and repair 2-speed idle I/M program, the LEV program, reformulated gasoline, and California's clean diesel fuel. Also included are adjustments to the straight EMFAC/BURDEN inventories to account for the existence of the national 4.0 g/bhp-hr NOx standard for heavy duty vehicles beginning in 1998.

The benefits of regulating the importation of 49-state vehicles into California, as described in the preamble, were calculated using draft versions of the EPA MOBILE5b and CALI5b models, since CARB was not attempting to provide EMFAC-based

modeling of this measure. CALI5b was a November 1994 draft of MOBILE5b with modified model year emission control groupings, basic emission rates, and registration age mix based on EMFAC7F.

Vehicles certified to 49-state standards were assumed to comprise approximately 10 percent of the light duty VMT and 22 percent of the heavy duty VMT in the FIP areas, in accordance with EMFAC assumptions. The 49-state vehicle emissions were estimated with MOBILE5b and the California-certified vehicle emissions with CALI5b. The benefits were calculated by assuming that 80 percent of the 1999 and later model year 49-state vehicle VMT would change to California vehicle VMT. The remaining 20 percent of 49-state VMT was estimated to represent 49-state vehicles driven into California by visitors and vacationers.

The benefits of emission standards for medium and heavy duty vehicles were taken directly from the SIP, since the SIP and FIP emission standards for these vehicles are comparable.

The ILEV program is expected to reduce VOC emissions by eliminating the evaporative emissions from vehicles meeting this standard. It was estimated that 8 percent of the VMT in each FIP area would be attributable to ILEV's.

(2) Nonroad Vehicles and Engines. A full range of nonroad engines and vehicles are addressed in this rule, from small hand-held gasoline lawn and garden equipment to heavy duty diesel engines used in farm and construction work. The inventories for many of these categories are taken directly from CARB estimates. But for utility (lawn and garden) and recreational boat engines

EPA needed to separate out the control factors and growth rates assumed by CARB to be able to apply control factors consistent with EPA guidance on credits for the national rulemakings.

In the FIP proposal the aircraft emission inventory was based partially on CARB estimates and partially on estimates determined by an EPA contractor. Aircraft inventory numbers are now based totally on the updated CARB inventory. It should be noted that emissions from mobile sources at airports also include ground access vehicles and airport ground support equipment (GSE). Ground access vehicle emissions are included in the overall FIP area numbers for on-highway vehicles described above in section (d)(1). Similarly, baseline emissions from GSE are part of the overall FIP nonroad equipment inventory mentioned earlier in this section, while the effects of GSE controls were determined using much more specific GSE analysis based in part on data submitted by the Air Transport Association (ATA).

(3) Mobile baseline inventory summary. The following tables summarize the baseline mobile source emissions in each of the three FIP areas.

Sacramento Mobile Source VOC Emissions
(tons per summer day)

	1990	2005
Highway Vehicles	110.0	38.1
Off-Road Vehicles/Boats	14.0	16.5
Locomotives	0.4	0.4
Ships	0.0	0.0
Aircraft	1.4	1.4
Mobile Equipment	3.4	3.1
Lawn/Garden Equipment	5.1	7.0
Total Mobile	134.2	66.5

Sacramento Mobile Source NOx Emissions
(tons per summer day)

	1990	2005
Highway Vehicles	117.6	79.6
Off-Road Vehicles/Boats	2.3	3.3
Locomotives	10.1	9.6
Ships	0.0	0.0
Aircraft	1.5	2.0
Mobile Equipment	20.1	14.4
Lawn/Garden Equipment	0.1	0.2
Total Mobile	151.7	109.0

Ventura Mobile Source VOC Emission
(tons per summer day)

	1990	2005
Highway Vehicles	35.6	11.4
Off-Road Vehicles/Boats	1.41	1.16
Locomotives	0.04	0.06
Ships	0.69	0.95
Aircraft	0.54	0.56
Mobile Equipment	1.69	1.55
Lawn/Garden Equipment	1.43	1.69
Total Mobile	41.43	17.40

Ventura Mobile Source NOx Emissions
(tons per summer day)

	1990	2005
Highway Vehicles	42.69	25.66
Off-Road Vehicles/Boats	0.73	1.11
Locomotives	1.19	1.54
Ships	9.46	14.19
Aircraft	0.26	0.85
Mobile Equipment	8.33	5.71
Lawn/Garden Equipment	0.06	0.08
Total Mobile	62.72	49.14

South Coast Mobile Source VOC Emissions
(tons per summer day)

	1990	2010
Highway Vehicles	700.1	174.1
Off-Road Vehicles/Boats	39.0	33.5
Locomotives	1.5	1.7
Ships	1.4	1.2
Aircraft	12.1	19.3
Mobile Equipment	68.2	93.9
Lawn/Garden Equipment	23.9	39.6
Total Mobile	846.2	363.3

South Coast Mobile Source NOx Emissions
(tons per summer day)

	1990	2010
Highway Vehicles	745.2	480.0
Off-Road Vehicles/Boats	10.9	12.8
Locomotives	31.5	34.7
Ships	24.3	24.4
Aircraft	15.4	18.4
Mobile Equipment	289.8	253.7
Lawn/Garden Equipment	0.9	1.6
Total Mobile	1,118.0	825.7

3. Air quality and modeling analyses. Many of the modeling issues discussed below regarding specific FIP areas are actually generic issues that apply similarly elsewhere. Readers

are encouraged to review the discussions regarding each of the three FIP areas.

a. Sacramento Ozone.

(1) Changes since proposal. Since the time that modeling was finalized for the FIP proposal, ARB has made extensive revisions to the Urban Airshed Model (UAM) inputs for the July 11-13, 1990 Sacramento ozone episode. This resulted in changed estimates for carrying capacity and for the amount of emission reductions required for ozone attainment. In order to be consistent with the SIP, and because the new inputs resulted in better model performance, EPA is using results from the latest ARB modeling.

The UAM input changes incorporated additional data for model input estimation, removed some input anomalies, and resulted in a better match to observations. The most significant of the input changes were in biogenic emissions, vehicle emissions, inversion height, and winds. The latter resulted in less emissions being blown out of the area to the east, and also an increased effect of biogenic emissions in the west. The net result was an increase in the predicted ozone peak concentration, and thus a decrease in the carrying capacity for the area.

Whereas the targets in the FIP proposal were 40 percent VOC reduction and 30 percent NO_x reduction from 1990 levels, the improved targets being used in today's final action are 39 percent VOC and 40 percent NO_x reduction. Combining these with the emission inventory totals for Sacramento, the carrying

capacity of the Sacramento nonattainment area is 137 tons/day of VOC and 98 tons/day of NO_x emissions. Emissions must be reduced to these levels for attainment of the ozone NAAQS.

(2) Summary of comments and responses. As in the FIP proposal, the Sacramento reduction requirements are based on simulation of across-the-board reductions of emissions as they are distributed temporally and spatially. They are not based on direct simulation of control measures with UAM, as would be desirable, as commenters noted. Unfortunately, changes in the control measures in response to public comment, and also technical questions over how to model mobile source emissions, precluded modeling the controls directly with UAM in time for the court-ordered FIP promulgation deadline. In spite of this, even if control measures were run directly through UAM, the carrying capacities would be unlikely to be far from that used in the FIP.

Several commenters stated the uncertainty in UAM modeling is so large that control strategies should not be based on the model. The Clean Air Act requires that a photochemical model be used to demonstrate attainment, however, and the Urban Airshed Model was developed over more than a decade before it was accepted by the scientific and regulatory community as a good model to use for this purpose. While the photochemical models are constantly being improved, UAM has been repeatedly shown to give reasonable results, and there simply is no better tool available to use to predict required emissions reductions in urban areas. EPA is using the best available results from UAM

for the FIP and, as more modeling data becomes available, will revise or update the FIP as necessary.

EPA sets several goals for UAM model performance, including a maximum (unsigned) error of 30-35 percent averaged over all monitoring stations and a maximum error in predicting the ozone peak of 15-20%. The guidance was developed by photochemical modeling experts both inside and outside of EPA. They recognized the many imperfections in air quality measurements, emission inventory inputs, and algorithms used to handle meteorology and chemistry that are present in any real-world model. The performance goals were set to reflect the state of the art at this time. Slight changes in wind direction can cause a predicted ozone level to occur somewhat displaced from the monitoring stations, so one must look at the overall model performance in judging its adequacy, not just at a few summary statistics. Hundreds of spatial and temporal plots were examined to ensure the model was performing well. The simulation used in the FIP had figures of 17.5 percent and 12 percent for average error and peak error, respectively; and the plots show model performance that is scientifically reasonable. Thus, the simulation meets the goals set forth in EPA guidance, and is acceptable as a basis for formulating a control strategy.

The problem of pollutant transport was raised by several commenters. Transport of pollutants to Sacramento from the San Francisco Bay Area and the San Joaquin Valley is still not fully understood at this time. Initial simulations of the August 7-9,

1990 ozone episode were not continued because they were so driven by uncertain boundary conditions that prediction of required reductions would not be reliable. The boundary conditions were set from available air quality monitoring sites and a few measurements aloft, and showed significant pollutant influx from outside the Sacramento area. However, the coverage of measurements, especially aloft, was too sparse to be certain of the magnitude of the pollutant influx or of its source. Even if these were well known, chemical transformation of the transported pollutants from their source would need to be modeled before an estimate could be made of additional emission reductions required in Sacramento or upwind. Essentially, this is what is being done in the modeling being performed for the San Joaquin Valley Air Quality Study, which encompasses all three nonattainment areas. When it is complete, this will be relied upon for showing attainment under conditions of pollutant transport. It should be noted that the control requirements in the final FIP are needed whether or not there is pollutant transport as they are based on a need to reduce emissions in the Sacramento area. As a reliable model of transport becomes available, further controls beyond those promulgated in this notice may be necessary.

One commenter stated that biogenic emissions of VOC and NO_x were not being addressed in the modeling. While emission reduction targets and carrying capacities are stated in terms of anthropogenic emissions, biogenic emissions were taken into account in the modeling. That is, biogenic emissions of VOC are

held constant while reductions of anthropogenic emissions are simulated to derive the carrying capacity. EPA's BEIS (Biogenic Emission Inventory System) model was used to derive UAM inputs for Sacramento, as is being done in most areas of the country. Based on the latest research at the time of its development, BEIS underwent an evaluation process and was deemed acceptable for UAM input. A new study is under way in the Sacramento area that may yield improved estimates in the upcoming year, but BEIS was the best tool available within the FIP promulgation schedule. Biogenic NO_x from soil was not included in the model, as it is not yet characterized well enough for an accepted algorithm to be used in developing UAM inputs.

Finally, commenters noted that while the proposed UAM modeling was performed using motor vehicle emissions from ARB's EMFAC model, the percent emission reduction targets derived from this were applied to emissions from EPA's MOBILE model. Since the FIP proposal, EPA has worked with CARB to finalize the FIP with a consistent EMFAC-based inventory throughout.

b. Ventura Ozone.

(1) Summary of proposal. The attainment demonstration modeling in the FIP proposal relied on air pollution episodes available through the 1984-1985 South Central Coast Cooperative Air Monitoring Project (SCCCAMP) field study. Previous analyses of SCCCAMP episodes had established across-the-board reduction targets of 40 percent VOC and 40 percent NO_x from a 1987 emissions baseline. This equated to "carrying capacity" targets

of 57 tpd VOC and 46 tpd NOx. EPA proposed a set of control strategies projected to reduce emissions to these carrying capacities, but did not directly simulate the impact of the proposed measures with UAM to account for spatial and temporal variations.

(2) Summary of comments and responses. Comments on estimated inventories and emission reductions are generally addressed with the relevant control measures in sections III.C and III.D of this notice. Significant comments on the proposed attainment demonstration modeling include the following.

Many commenters argued that EPA should rely on the November 1994 SIP as much as possible to facilitate replacement of the FIP. EPA concurs with this goal and has used the SIP emission inventories and modeling information as the basis for the FIP attainment demonstration.

A commenter suggested that 40 percent emission reductions in VOC and NOx may not be adequate to demonstrate attainment using UAM. The SIP submitted by California in November 1994 substantiated this concern, and estimated that reductions of 46 percent VOC and 49 percent NOx were necessary for attainment. EPA is using these revised targets in this notice.

A commenter argued that EPA must predict one-hour ozone concentrations below 0.120 ppm for every hour of the 6, 7, and 17 September 1984 modeling days at every grid cell in the domain. For purposes of this notice, however, EPA's attainment demonstration predicts concentrations below 0.12 ppm at every

monitoring site. This is consistent with modeling performed for the SIP as discussed in section II.D of this notice.

A commenter noted that EPA's attainment demonstration must meet the performance goals contained in EPA's modeling guidance. EPA concurs that model performance goals should be met where possible, but notes that they may not be achievable in all cases. Failure to fully achieve all modeling goals may indicate need for further refinement of model inputs, and EPA plans to incorporate model improvements currently underway at the state level. This includes, for example, changes to the biogenic emission estimates and the coastal mixing heights which will likely improve model performance.

Several commenters noted that EPA should simulate the impact of the final FIP measures with UAM to account for spatial and temporal variations. Commenters also suggested that control measures address relative reactivity of various VOCs and one commenter noted various concerns regarding EPA's use of Empirical Kinetic Modeling Approach (EKMA). EPA has relied on across the board reductions based on UAM simulations for purposes of this notice but, as discussed in the technical support to this notice, intends to perform UAM simulations on the FIP control strategies in the near future. EPA expects that this analysis will adequately address concerns regarding relative reactivity and temporal and spatial distribution.

A commenter suggested that EPA has not adequately demonstrated that NOx reductions will reduce ambient ozone

concentrations. Other commenters suggested that the FIP overemphasizes VOC control in light of the 1991 National Academy of Sciences Report entitled, "Rethinking the Ozone Problem in Urban and Regional Air Pollution." While there are many conflicting theories regarding details of ozone formation, EPA selected the specific NOx and VOC reduction requirements for Ventura using the best technical information available: the UAM simulations performed for the Ventura SIP which reflect atmospheric conditions specific to Ventura.

Several commenters argued that EPA has not adequately considered biogenic emissions. However, the photochemical modeling performed for the analysis incorporated biogenic emissions generated by the EPA biogenic emission model, BEIS (Biogenic Emission Inventory System). Approximately 250 tons per day of VOC emissions, for example, were assumed to evolve from biogenic sources in the modeling domain which includes Ventura and Santa Barbara. EPA concurs that the biogenic emissions in the domain are uncertain, although not necessarily underpredicted, and warrant further investigation.

A commenter recommended that additional monitoring stations should be installed in the Ojai Valley. EPA intends to review the current adequacy of the ozone monitoring network according to 40 CFR Part 58 and determine if additional sites are warranted.

(3) Ventura Modeling Analysis. The most extensive and up-to-date urban airshed modeling for Ventura was performed by VCAPCD for the 1994 SIP submittal and discussed in section II.D

of this notice. As recommended by many commenters, EPA is relying on this work for this notice to take advantage of model improvements made by VCAPCD and to facilitate replacement of FIP measures with the SIP. For purposes of this attainment demonstration, therefore, EPA is using across-the-board carrying capacity attainment targets of 45 tons/day VOC and 40 tons/day NOx.

(4) Anticipated future action. EPA intends to perform ambient air quality monitoring in the area of predicted high ozone concentration approximately 3 miles east of Cassitas Pass. If the elevated predicted concentrations are verified by ambient data, additional control measures may be needed to ensure that the entire county attains the standard.

CARB and VCAPCD are attempting model improvements regarding, among other issues, the unexpectedly high predicted biogenic emissions. After these improvements are completed (scheduled for early 1995), the model may predict lower ozone peaks, possibly eliminating the concern east of Cassitas Pass.

Finally, EPA, CARB, VCAPCD, SCAQMD, San Diego Air Pollution Control District, and other agencies are planning a study in 1997 to better understand ozone transport throughout the southern portion of California. This analysis could help resolve much of the underlying uncertainty with the existing modeling efforts in Ventura.

c. South Coast Ozone. The current carrying capacity of 553 tpd NOx and 321 tpd VOC is based on the modeling analysis

performed by the SCAQMD and discussed in II-E.

The modeling analysis required for the attainment demonstration has not undergone significant change since the FIP proposal. However, the current carrying capacity reflects a substantial change from that used in the FIP proposal (399 tpd NOx and 187 tpd VOC), and the previous 1991 AQMP carrying capacity, especially with respect to NOx emissions. The difference primarily reflects a change in the choice of control strategies for the SIP within the range indicated by the photochemical modeling performed for the basin, rather than substantial changes to the model application. In order to retain the goal of consistency with the SIP, EPA has chosen to incorporate the changes to the carrying capacity for the FIP.

The photochemical modeling application results for the basin indicate a range of potential control strategies that will bring the ozone levels in the basin to the NAAQS. The choice of one particular strategy among the range of possible choices depends additional factors, including the effect on the emission reductions on other pollutants. The South Coast Basin, in addition to high ozone values, has very high concentrations of particulate matter. The concentration of particulate matter in the basin is substantially increased by the presence of secondary particulate matter, the formation of which is influenced by the presence of NOx. The FIP proposal reflected the 1991 AQMP's relatively high reductions of NOx, a choice that met the requirement to demonstrate attainment for ozone while also

addressing the need to reduce secondary particulate matter.

The carrying capacity used for the 1994 SIP submittal is based on a strategy that will attain the ozone standard, but does not address the basin's particulate problem. In order to be consistent with the most current SIP submittal, the FIP carrying capacity numbers also have been adjusted.

The change in carrying capacity does not obviate the need for additional NOx reductions to meet the particulate standard; rather, it shifts the timeframe for the submittal of additional NOx reduction measures to that of the "Serious" area PM10 SIP, February 8, 1997. The additional time may allow for a more complete understanding of the formation of secondary particulate matter in the South Coast Air Basin, and a more refined approximation of the NOx reductions required to meet the particulate standard.

EPA is in the final stages of reassessing the existing particulate matter (PM) NAAQS, and the Agency may be promulgating a new NAAQS that targets a smaller size particulate, such as particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers, rather than the existing 10 micrometers.⁵³ A new PM NAAQS addressing smaller particulates would place additional emphasis on the need to control NOx emissions, which form nitrates and nitrites -- a substantial

⁵³Under court order, EPA must complete its review of the particulate matter NAAQS by December 31, 1995. American Lung Association v. Browner, U.S. District Court for the District of Arizona, October 6, 1994 (CIV-93-643-TUC-ACM).

portion of the fine particulate in the South Coast.

The revision to the carrying capacity also reflects a number of small changes to the UAM application itself, although these changes result in a minor difference in carrying capacity compared to the choice of not addressing particulate matter, discussed above. These changes are discussed in the TSD.

As in the FIP proposal, the reduction requirements are based on simulation of across-the-board reductions of emissions as they are distributed temporally and spatially in 2010. That is, they are not based on direct simulation of control measures with UAM, as would be desirable. Unfortunately, changes in the control measures in response to public comment, and also technical questions over how to model mobile source emissions, precluded modeling the controls directly with UAM in time for the court-ordered FIP promulgation deadline.

d. South Coast CO. As discussed in the proposal, the FIP attainment demonstration is based on SCAQMD modeling analyses included in the AQMP submittal. The SCAQMD analysis included both an areawide analysis to determine the regional CO levels and a "hot-spot" component to determine the CO concentration at four heavily traveled intersections.

The areawide analysis was conducted using the Urban Airshed Model, according to the "Guidance for Application of Urban Areawide Models for CO Attainment Demonstration". The projected peak 8-hour carbon monoxide concentration for projected year 2000 emissions with proposed controls (4405 tons per day) was 9.0 ppm.

The maximum projected 8-hour average at an intersection (the Lynwood site) was 8.1 ppm.

The "hot-spot" analysis was performed for four intersections (Lynwood, Hollywood, Westwood and Inglewood), using CAL3QHC and base case as well as worst case meteorological data. Projected peak "hot-spot" concentrations under base case meteorology were 1.1 ppm at Lynwood and Inglewood and 1.7 ppm in Westwood and Hollywood.

The combined areawide analysis and "hot-spot" analysis concentration demonstrate compliance with the 8-hour carbon monoxide standard at the Westwood, Hollywood and Inglewood intersections. The Lynwood regional and peak "hot-spot" concentrations individually comply with the 8-hour carbon monoxide standard. The concentrations were not aggregated, based on the conclusions of a 1991 study of the carbon monoxide in the Lynwood Area.

4. [RESERVED]

5. Attainment demonstrations.

a. Sacramento Ozone. 1990 and 2005 inventories for Sacramento are summarized in section III.G.2 of this notice. Creditable emission reductions due to SIP and FIP measures are summarized in sections III.C and III.D of this notice, and the technical support to this notice. The carrying capacity emissions of 136 tpd VOC and 98 tpd NOx are provided in section

III.G.3 of this notice. Comparison of the projected emissions in 2005 and the carrying capacity emissions predicts attainment and is summarized in the table labeled, "Sacramento Attainment Emissions."

Sacramento Attainment Emissions

(tons per summer day)

Emissions in 2005	Before FIP		FIP Reduced		After FIP	
	VOC	NOx	VOC	NOx	VOC	NOx
Stationary	106	15	19	2	87	13
Mobile	67	109	26	24	41	85
TOTAL	173	124	45	26	128	98
Carrying capacity	136	98	--	--	136	98

b. Ventura Ozone. 1990 and 2005 inventories for Ventura are summarized in section III.G.2 of this notice. Creditable emission reductions due to SIP and FIP measures are summarized in sections III.C and III.D of this notice, and the technical support to this notice. The carrying capacity emissions of 45 tpd VOC and 40 tpd NOx are provided in section III.G.3 of this notice. Comparison of the projected emissions in 2005 and the carrying capacity emissions predicts attainment and is summarized in the table labeled, "Ventura Attainment Emissions."

Ventura Attainment Emissions

(tons per summer day)

Emissions in 2005	Before FIP		FIP Reduced		After FIP	
	VOC	NOx	VOC	NOx	VOC	NOx
Stationary	42	10	8	0	34	10
Mobile	17	49	6	19	11	30
TOTAL	59	59	14	19	45	40
Carrying capacity	45	40	--	--	45	40

c. South Coast ozone. 2010 VOC and NOx inventories for the South Coast Air Basin are summarized in section III.G.3 of this notice. Creditable emission reductions due to SIP and FIP measures are summarized in sections III.C and III.D of this notice, and in the technical support to this notice. The carrying capacity emissions of 323 tpd VOC and 553 tpd NOx are based on the carrying capacity used by SCAQMD and CARB in the SIP. Comparison of the remaining 2010 emissions (after credit for SIP and FIP measures) and the carrying capacity emissions predicts attainment as summarized in the following table labeled, "South Coast Attainment Emissions."

South Coast Attainment Emissions

(tons per summer day)

	Before FIP	FIP Reduced	After FIP
--	------------	-------------	-----------

Emissions in 2010	VOC	NOx	VOC	NOx	VOC	NOx
Stationary	727	106	520	7	207	99
Mobile	363	826	247	372	116	454
TOTAL	1090	932	767	379	323	553
Carrying capacity	323	553	--	--	323	553

d. South Coast CO.

1990 and 2000 inventories for South Coast are summarized in section III.G.2 of this notice. Creditable emission reductions due to SIP and FIP measures are summarized in Section III.D of this notice, and the technical support to this notice. The carrying capacity emissions of 4835 tpd CO are provided in Section III.G.3 of this notice. Comparison of the projected emissions in 2000 and the carrying capacity emissions predicts attainment and is summarized in the table labeled, "South Coast CO Attainment Emissions."

South Coast Attainment Emissions

(tons per summer day)

	CO
2000 Stationary source controlled emissions	170
2000 mobile source controlled emissions	4023

TOTAL 2000 controlled emissions	4193
Carrying capacity	4835

H. Transportation Conformity

1. Emissions Budgets for South Coast (VOC, NOx)

The preamble to the proposed FIP indicated that the South Coast FIP would not establish on-road motor vehicle emissions budgets binding on the MPOs or U.S. DOT, because under Clean Air Act section 182(e)(5) the South Coast FIP would not specifically allocate emission reductions in the 2010 attainment year between transportation and other sources.

Although today's action is consistent with the proposed FIP and will not establish emissions budgets for the South Coast, EPA will be proposing in a forthcoming Notice of Proposed Rulemaking that the FIP's emissions projections for 2000 and 2005 be used as motor vehicle emissions budgets for the South Coast for VOC and NOx. EPA is not establishing such emissions budgets in today's action because the Administrative Procedures Act requires opportunity for public comment.

EPA would establish emission budgets for the South Coast under EPA's general authority to act in the shoes of the State to promulgate measures that will contribute to reaching attainment expeditiously. The proposal will discuss the benefits of establishing budgets consistent with the FIP attainment strategy in order to assure that long-term infrastructure investments and

transportation planning policies and decisions match the regulatory strategy designed to assure attainment.

The recently submitted California SIP also projects highway vehicle emissions for every three years after 1999. This SIP has not received full approval, however. Therefore the final FIP must be promulgated and, at the point at which the FIP rules become effective, it becomes the applicable plan for conformity purposes and allocates the required emission reductions among the affected sources.

The conformity rule provides that ninety days after submittal, a SIP submission establishes a ceiling on motor vehicle emissions for any pollutant addressed. It does not, however, remove the simultaneous applicability of the budgets approved in the applicable plan. The practical result of this is that both budgets would apply, and where there was conflict, then the more stringent of the two would prevail.

2. Conformity Consequences of SIP Failures

According to the transportation conformity rule, the conformity status of transportation plans and programs may ultimately lapse if EPA finds a failure to submit a control strategy SIP, finds a control strategy SIP incomplete, or disapproves a control strategy SIP (see 40 CFR 93.128). Control strategy SIPs include 15% SIPs, attainment SIPs, and post-1996 rate-of-progress SIPs.

The promulgation of a FIP does not override the transportation conformity rule's consequences for SIP failures.

Although the FIP establishes motor vehicle emissions budgets to be used for transportation conformity purposes, the transportation conformity rule does not allow areas subject to the FIP to be relieved of the consequences that any other area with a SIP failure must face. Therefore, the provisions of 40 CFR 93.128 will apply in California depending on the status of SIP submissions and EPA completeness findings and actions addressing those submissions.

I. FIP Implementation by State and Local Agencies.

1. Program transfer through delegation. As discussed in the FIP proposal and elsewhere in this notice, EPA believes that the involved California State and local agencies have the responsibility to design, adopt, and implement the control programs needed for attainment. EPA also believes that these agencies have superior enforcement resources and other practical advantages to achieve the highest rates of actual compliance in the field. For these reasons, EPA seeks to employ all available mechanisms to expedite program transfer.

In the ideal situation, EPA will be able to rescind the FIPs at the time of approval of the SIPs. EPA will hasten future SIP approvals in order to facilitate the removal of the FIP through complete SIP approval. EPA hopes that the delayed effective date of the FIP provisions will allow sufficient time for replacement of the FIP before the Federal regulatory regime takes hold.

In the event that SIP rule adoption and approval is delayed,

however, EPA hopes to be able to delegate full or partial implementation of the FIP measures to take advantage of the experienced staff, ongoing permit and compliance programs, and established relationships that already exist at the State and local air pollution control agencies.

The delegation process is described in the proposal (59 FR 23401-2). No significant comments were received on this section of the notice, and EPA intends to pursue the delegation procedures discussed in the proposal.

2. FIP implementation by local air agencies through operating permit programs. The proposal discussed the new Title V operating permit requirements of the 1990 CAA Amendments (59 FR 23401). The Act now requires State and local agencies to adopt rules requiring operating permits for major stationary sources and other specific types of sources. These operating permits must contain limits and conditions to assure compliance with pertinent provisions of the Act, including FIP requirements.

Title V sources in the FIP areas should ensure that their permit applications reflect compliance with all applicable FIP provisions. The local air pollution control agencies in the FIP areas must then ensure that the Title V operating permits which they issue incorporate the FIP requirements.

IV. Administrative Requirements.

A. Docket. The docket for this regulatory action is A-94-09. The docket is an organized file of all the information

submitted to, or otherwise considered by, EPA in the development of this rulemaking. The principal purposes of the docket are:

1. To allow interested parties a means to identify and locate documents so that they can effectively participate in the rulemaking process, and

2. To serve as the record in case of judicial review. The docket is available for public inspection as described under the ADDRESSES section of this notice.

B. OMB Review. The final regulation presented in this notice was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12866. Any written comments from OMB to EPA and any written EPA response to those comments will be included in the docket and available for public review.

C. Regulatory Impact Analysis (RIA).

1. Summary of proposal. The estimated annualized control cost to meet the ozone NAAQS by 2005 in the Sacramento and Ventura nonattainment areas was \$150 million for each area. The estimated annualized control cost to meet the ozone NAAQS by 2010 in the South Coast Air Basin was \$3 to \$4 billion. The estimated incremental cost to achieve the carbon monoxide NAAQS in the South Coast by 2000 was zero because the enhanced inspection and maintenance program and other measures needed to achieve the Ozone NAAQS would also adequately reduce carbon monoxide concentrations. The estimated cost for the relevant carbon monoxide programs were reflected in the cost to meet the ozone

standard.

The environmental and economic benefits from the proposed FIPs were also projected to be potentially large in terms of both the human population affected and the amount of crop and forest acreage affected. Furthermore, because of the jointness of many control measures, benefits would accrue not only from reduced ozone and carbon monoxide concentrations, but also from reduced nitrogen dioxide, particulate matter and air toxics concentrations. Unfortunately, scientific and data limitations precluded a comprehensive quantitative assessment of benefits needed to determine whether the FIP proposal maximizes net benefits (i.e., benefits minus costs).

2. Summary of comments and responses. EPA received numerous comments regarding cost and emission estimates for specific control measures. As a result of these comments and of additional analysis performed since the proposal, EPA revised many of the cost-effectiveness calculations incorporated in the RIA. Summaries and responses to these specific comments are found with the discussions of specific measures in sections III.C and III.D of this notice and in the technical support to this notice.

Many commenters noted that the draft RIA did not include cost estimates for all the control measures. EPA has corrected this deficiency for the final RIA. In addition, EPA received general comments that the RIA did not estimate the impact of the proposed measures on employment or on State and local government.

Control measures that will directly affect State and local governments include: the NOx measures for boilers and IC engines in the Sacramento area, the control measure for municipal solid waste landfills in the Sacramento area, and the mobile source control measures for vehicle fleets in all three FIP areas. Cost estimates for these measures are included in the RIA. State and local governments are not expected to incur costs in implementing the measures since EPA will be responsible for FIP implementation and enforcement.

EPA also received general comments on the discussion of benefits included in the draft RIA, including requests for quantification of benefits of each individual control measure. Because of time and resource constraints, however, EPA was not able to conduct a quantitative benefits analysis for the FIPs. These restraints notwithstanding, it is not appropriate to perform such analysis on individual regulations because of jointness between control measures. However, emission reductions achieved by specific control measures could be used as a surrogate for benefits and are available in the final RIA.

Several commenters argued that EPA did not pursue the least-cost strategy in developing the FIP. Given the uncertainties in the analysis, it is impossible to precisely identify one least-cost strategy. EPA is confident, however, that the selected mix of controls is cost-effective compared to across-the-board reductions in either VOC or NOx.

In addition, EPA received several comments regarding

Executive Order 12866. Several commenters, for example, argued that EPA did not fulfill principle 6 of the Executive Order which requires, "a reasoned determination that the benefits of the intended regulation justify its costs." The Clean Air Act, however, precludes consideration of benefits and costs in setting the NAAQS, therefore principle 6 does not apply here.

Furthermore EPA's statutory requirement to develop the FIPs limit the Agency's flexibility to fully utilize the Executive Order. Nonetheless, EPA has conducted cost-effectiveness analyses in pursuing the least-cost control strategy to attain the ozone NAAQS.

Finally, one commenter also argued that EPA did not adequately analyze the impact of this rulemaking on households as required by the Executive Order. The RIA does, however, estimate the cost of FIP measures on affected industry and commerce, which provides an overall estimate of the increased costs to consumers of goods and services. EPA also estimated the potential impact of the enhanced inspection and maintenance program on households of various incomes.

3. Summary of final RIA. EPA estimates the total annualized control and information collection costs of achieving the ozone NAAQS under the FIP as \$110 million in the Sacramento area, \$36 million in Ventura, and \$1.7 billion in the South Coast Air Basin. The estimated incremental cost to achieve the carbon monoxide NAAQS in the South Coast by 2000 remains zero. When impacts of the statewide measures on the non-FIP areas are

included, the total annualized attainment year cost of the FIP is estimated at approximately \$2.8 billion.

There are many uncertainties in these calculations, and the actual cost of the promulgated FIP measures may be higher or lower. Perhaps the most uncertain cost component is the section 182(e)(5) VOC control measures in the South Coast, which were estimated to cost \$10,000 per ton of emission reductions and which represent the largest share of the total FIP cost. If, for example, the average §182(e)(5) cost is actually \$20,000 per ton, then the total annualized FIP cost would be approximately \$800 million higher.

While EPA was not able to conduct a quantitative benefit analysis of the FIPs, the RIA describes available analyses of the benefits of ambient ozone reductions. For example, an exposure assessment conducted for Los Angeles using 1991 air quality reveals that 9.1% of the total population experiences ozone exposures over the 0.12 ppm, 1 hour standard at high exercise. Attainment of the 0.12 ppm, 1 hour standard would reduce exposure to less than 0.005% of the total population. Health effects such as decreased pulmonary function, symptomatic effects (e.g., nose and throat irritation, chest discomfort, cough, chest pain on deep inspiration, chest tightness), and reduction in exercise performance and worker productivity are associated with these types of exposures.

D. Regulatory Flexibility Act. The Regulatory Flexibility Act (5 U.S.C. 601 et. seq.) requires Federal agencies to identify

potentially adverse impacts of Federal regulations upon small entities. Small entities include small businesses, organizations, and governmental jurisdictions. The FIP measures may adversely affect such entities. Consequently, a summary of the impacts on small entities was included in the draft RIA prepared with the FIP proposal.

One commenter argued that the 5% cost-to-sales ratio should be replaced with a lower ratio and a cost-to-profits basis as an indicator of significant impact on small business. EPA is using a 3% (not 5%) cost-to-sales ratio, which has historically sustained scrutiny as an acceptable indicator. The cost-to-profits ratio has not been used because profits information is not uniformly available, especially for small business. Other commenters asserted that the draft RIA did not adequately fulfill the Regulatory Flexibility Act requirements. EPA has prepared a more detailed Regulatory Flexibility Analysis (RFA) for this notice which is available for public review in the docket.

As part of the RFA, EPA estimated the small business impact of each relevant FIP measure as well as the cumulative impact of multiple measures. Some sources, for example, could be subject to regulation under both the fugitive measure and the South Coast stationary source VOC cap program. EPA also estimated the impact of the I/M program on households of various incomes. While most of the FIP measures are projected to have limited impact, the stationary source cap measures may result in significant impacts on small business in the South Coast area.

E. Paperwork Reduction Act. The Paperwork Reduction Act (44 U.S.C. 3501, et. seq.) requires that a Federal agency prepare an Information Collection Request document (ICR) to obtain OMB clearance for any activity that will involve collecting information from ten or more non-Federal respondents. The FIP proposal included requirements for reporting, monitoring, and recordkeeping and that would affect the private sector as well as local, State, and Federal authorities. As a result, EPA prepared a draft ICR which discussed the impact of the information collection requirements. OMB's comments on the draft ICR are available for public review in the docket. EPA has revised the ICR to reflect modifications to the proposed measures and comments from OMB and the public.

The revised ICR has been forwarded to OMB for review and approval under the Paperwork Reduction Act. Upon approval of the ICR by OMB, a notice will be published in the Federal Register. A copy of the ICR (ICR No. _____) may be obtained from Sandy Farmer, Information Policy Branch (PM-2136), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, or by calling (202) 260-2740.

Public reporting burden for this collection of information is estimated at 600,000 hours for all respondents annually. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other

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for reducing this burden to Chief, Information Policy Branch (PM-2136), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

List of Subjects in 40 CFR Part 52

Environmental Protection Agency, Air pollution control, Carbon monoxide, Hydrocarbons, Incorporation by reference, Intergovernmental relations, Oxides of nitrogen, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Authority: 42 U.S.C. 7401-7671q.

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Date



Carol M. Browner,
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